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EDITORIAL — SOME HIGH LIGHTS

General Economic Scene

State

Fifth Plan Preparation: The Government with the help of the State Planning Commission is preparing its position with regard to the Approach Paper to be formulated by Union Planning Commission, by 30th September as pointed out in the last issue of the Bulletin. The National Development Council meeting at the end of May endorsed the goals, strategy and magnitude of outlays and resources for the Fifth Plan summarised in Vol. II No. 6 of the Bulletin. Specifically it endorsed the proposed employment oriented activities and the minimum needs programme. The employment oriented activities will comprise minor irrigation, soil conservation, area development, dairy and animal husbandry, forestry, fisheries, warehousing and marketing, small scale industries including agro-industries, roads, special programmes such as SFDA, MEAL CSRE and drought-prone areas programmes. The minimum needs programmes cover elementary education for children upto age 14, (this is more than elementary) minimum public health facilities integrated with family planning and nutrition for children, rural water supply; home sites for landless labour, rural roads, rural electrification and slum improvement in larger towns. In addition there is heavy emphasis on the location-specific character of the Plan in order to compensate backward districts and retarded pockets within the State. On this basis the State Planning Commission is undertaking the first tentative exercise of outlining the rationals and mapping of programmes and projects for the Fifth Plan within a target of Rs. 1,300 crores of what the Draft State Perspective Plan Frame calls the State outlay (See Vol. II No. 6). It is a tentative mapping of the State's outlay in the Fifth Plan frame because (a) the Commission's task forces have not yet completed their work, their sectoral perspectives being readied only in early September, and more important (b) the district plans are still under preparation, their completion date being September 30. The State outlay in the Fourth Plan is about half of what is proposed for the Fifth Plan, and its composition is about 63 percent from State resources and 37 percent in the form of Central assistance. The Central assistance is further made available, 30 percent in the form of grants and 70 percent in the form of loans. At a later stage the Commission will be called upon by the government to fill in this tentative picture by proposing the projects for the union government's outlay which consists of those which are centrally sponsored and those which are direct central investments, as well as the programmes for the joint and private sector.

Accord on Farmers Agitation: The 12 point demand of the Coimbatore District Agriculturalists Association and the accompanying agitation referred to in the last issue of the Bulletin have been the subject of an agreement between the Government and the Council, as follows: (a) power rates will be reduced from 12 paise per unit to 12 paise per unit upto the first 100 units and 11 paise per unit beyond the first 100 units. (b) Concessions in the recovery of agricultural loans in drought hit areas will be offered through payment of arrears in instalments, non-attachment of property for recovery of loans and

representation to the Reserve Bank to give relief to farmers on loan repayments for wells which have proved infructuous. Members of the Board of Revenue are to assess the areas which are to be classed to those hit by drought. (c) On farm prices, the government will set up a State Trading Corporation for procurement of farm produce and will examine the proposal for an expert committee to fix farm prices. The Union Government will be moved to purchase the cotton stocks with farmers. (d) On the agricultural income tax, the compounding facility is extended to all holdings and all crops without any ceiling limit. The government will examine further concessions to increase the exemption limit from the present 7½ to 10 standard acres and revise the definition of standard acres. (e) The penal levy for unauthorised irrigation has been dropped and will be examined at regional conferences further. (f) The extensions of irrigation facilities to drought prone areas and the declaration of such places as drought hit areas will be taken up with the Union Planning Commission and Government. (g) The introduction of crop and cattle insurance will be pursued with the Union Government (h) the government will examine the question of grant of pattas to the tillers of Inam lands. (i) The proposal for setting up an agricultural labourers' welfare fund to provide compensation to farmers losing their lives in the course of agricultural operations, with contributions from the workers and land owners and a matching grant from the government is to be examined. (j) The government will speed up its proposal to the whole State, the law for the conferment of ownership rights to agricultural labourers in respect of house sites occupied by them. A commission is to be set up to examine the fixing of minimum wages to agricultural labourers throughout the States. (k) The forest lands not required by the Forest Department are to be distributed to the landless poor. 50,000 acres of such land is to be so distributed this year to those who are engaged in their cultivation. (1) All judicial enquiries and cases are to be withdrawn and dropped.

The two major decisions which have been forced on the government are the lowering of power rates which will benefit the large farmers and the disbandment of the firm accounting base for the agricultural income tax. Both these concessions wrung out of the government as a result of the agitation are economically retrograde. The first one on lowering power rates above 100 units is not only regressive in that it provides relief only to the large farmer, it will cause a deceleration in the programme of energisation of pumpsets by making it difficult for the government to get loans for this programme. (All agencies, the Reserve Bank, the Agricultural Refinance Corporation, the World Bank and the Union Government have insisted that any further loans for rural electrification and energisation will be granted to Tamil Nadu only if its power rates are raised.). It places Tamil Nadu in an invidious position with its neighbouring States, Andhra Pradesh and Mysore, where the rates are much higher. One can understand the large farmer and the mill owners who are also landowners in the Coimbatore district fighting for this disastrous lowering of power rates. It is difficult to understand those who have been elected on the pledge of rapid rural electrification supporting this move. Even more serious is the second concession forced on the government. The Raj Committee appointed by the Union Government to propose a comprehensive system of agricultural and rural income taxation had just visited Tamil Nadu and after examining the agricultural income tax working here, decided to use it as the base and model for its report. Now this first progressive measure has been weakened and its base nullified. Again one can understand the desire of our farmers—being the only group in India to pay income taxes, and their being against the system. But the Union Government and the political parties, which are committed to

resource mobilisation, to raising the resources from the untaxed rural sector, which have solemnly set up the high power Raj Committee for this purpose and which in the NDC papers, Lok Sabha documents keep referring to this Committee, in supporting the farmers' demands so completely indicate either that they are not serious about taxing the rural surpluses and that the Raj Committee is just another committee like the Wanchoo Committee which serves public relations purposes or that basic economic development and social justice commitments are secondary to political in-fighting. The Prime Minister who was naturally concerned with the law and order consequences of the agitation and has enquired into it, should really examine what are issues of social justice, what are the anti-poverty issues which have been lost in this State as a result of the agitation and what part the various persons and parties have played in the sorry and serious event.

On two other demands the Government has already acted. The Tamil Nadu Kudiyiruppu Act now in force in Thanjavur district confers ownership on agriculturalists or agricultural labourers in respect of any house sites occupied by them on June 19, 1971. Under the Act, 33,000 agricultural labourers have been granted house sites ownership. The government decided three weeks before the accord with the Farmers' Council and made the announcement that the Act will be extended to the whole State and will benefit 2 lakh farm labourers with house sites. By September 15, 1.15 lakh agricultural labourers will be assigned house sites. The Government had also decided to establish a commission of enquiry for fixing minimum wages for farm labourers throughout the State. The Ganapathia Pillai Commission recommendations on minimum wages for farm labourers in Thanjavur District provides a pilot which will have to be adapted to conditions of work and wages which vary widely as between districts and blocks. In formulating a State wide programme of minimum wages, the working of the system in Thanjavur must be first reviewed. There was a certain amount of uncertainty in May/June about the status and time period of the minimum wages agreement in East Thanjavur. The workers point to the 50 percent increase in the prices which has occurred since its formulation. The landowners claim that the Ganapathia Pillai recommendation should be operative without time limit and that even before the time limit recommended revisions are being passed. In Puthur near Tiruthuraipoondi, farm work has stopped over 900 acres because of the wages dispute. The government has taken measures to maintain law and order during the current cultivation season and has extended the demand for a further 3 year period. The pioneering nature of the Ganapathia Pillai recommendation has vindicated itself and its working should be taken into account in extending a minimum farm wages system to the whole State.

Land Ceiling and Agrarian Reforms: In light of the decision at the 23 July meeting of the Chief Ministers Conference that the ceiling will be 10 to 18 acres for irrigated two-crop land, 27 acres for land with assured irrigation for one crop and 54 acres for dry land (60 acres for Tamil Nadu) for a family unit composed of husband, wife and three minor children to become operative from not later than January 24, 1971, the State Government which has the most advanced ceiling legislation in operation, will be introducing the few changes needed for Tamil Nadu, so that the agreed all-India decisions will be made to apply by the end of September here. One change would be to reduce the ceiling for a family of no more than five from 40 to 30 standard acres. The Chief Ministers conference decision also provides for additional land for each member of the family in excess of five but the total area should not exceed twice the ceiling limit.

Similarly land with private irrigation sources will get a weightage of 25 percent, subject to the condition that the limit of 18 acres is not exceeded. This is already in operation in this State as our 15 standard acres which is the equivalent of 12.8 acres of land with assured irrigation for 2 crops (which is non existent for private lands) is the generally agreed ceiling of 10 to 18 acres. On the question of exemption, the 1961 Act exemptions for grazing lands, sugarcane lands and hill areas have been withdrawn. The Joint Select Committee of the legislature meeting in Courtallum at the end of July has examined the withdrawal of exemption for educational, medical, religious and other trusts. Similarly the removal of exemption for privately owned seed farms, dairy farms and for livestook breeding has been announced. As part of the State's Agrarian reform a complete record of tenancies is being prepared. As of now 3 lakh tenancies have been recorded and with additional staff, the recording of all tenancy rights are to be completed by August 31, 1972. New legislation conferring ownership rights on the tenants is under preparation. This part of the State's agrarian reform will call for large finances for which a Tenants Finance Corporation has been proposed to assist the tenants with loans for purchasing ownership rights. Such a Corporation will have to be financed by the Union Government. In this connection a useful suggestion is that the acquisition of ownership rights by tenants could also be negotiated directly by the tenant and his land-owner within the frame of the proposed legislation and under the supervision of the Corporation in order to ensure speed in effecting the transfer, conformity to criteria in land values in different areas and soils and fairness to both parties. Other aspects of the land reform programme of the State include the assignment of 1,52,745 acres to landless labourers, in addition to the 5,29,485 acres which have been assigned to 2,65,872 landless labourers in the last five years. The income limit for the assignment of such pattas has been raised from Rs. 100 to Rs. 200 for a family of five and from Rs. 150 to Rs. 250 for a family of more than five. In addition steps are being taken to make sure that the allotted lands do not remain fallow. Finally the basic land tax on all dry farms has been abolished and the whole land revenue system has been simplified.

Southern States Zonal Council: The Zonal Council, which could be a useful instrument for integrated regional planning, development and execution of the South and which has been a sorely neglected tool (not having met for 2¼ years) at its July meeting attended by the Chief Ministers of the four Southern States and Pondicherry and presided over by the Prime Minister reached agreement on some important issues. First the States (Mysore and Kerala) having surplus power will, on the basis of bilateral arrangements, make it available to the needy States (Tamil Nadu and Andhra Pradesh). Second zonal institutions will be set up to train the senior officers in the four States. Third 5 percent of the seats in educational institutions of each State will be reserved for outside students thus promoting educational and regional mobility. The other decisions included the taking of a census of the ancient art pieces and the safeguarding of them by each State, the establishing and enforcing of rules for preventing air and water pollution in industrialisation schemes, the supply of boiled rice to Kerala, the enhancement of the ceiling of medical benefits from 4 beds to 11 beds per 1000 family units under the ESI scheme and safeguards for linguistic minorities The most important decision with implications for the future is that with regard to power sharing in the State. Tamil Nadu's proposal for a power pool for the Southern region was not accepted but the proposal and the development of a southern regional grid are long term pointers.

Power: The government has lifted the 25 percent power cut on the H. T. supplies as from mid July as the discharges from Mettur and Periyar have become adequate to generate the needed power. Further an ad hoc agreement has been reached with Mysore for the daily supply of 60 MW during the peak hours and discussions are under way for increasing this supply, and in return Tamil Nadu will be providing power to Mysore during the period in September when the five Sharavathi generation are closed down for repairs. The long term power needs of Tamil Nadu have been analysed in Vol. II Nos. 4 and 6. Our hydel resources are exhausted, a second atomic power plant is needed, Neyveli is exporting 2.5 million units against a capacity of 6 million units, our thermal stations are high cost sources at a time when power rates are being lowered by the farmers agitation. The situation in Andhra Pradesh is equally serious and the future demands of Mysore are expanding. This calls for maximising all power sources in the four States, the rehabilitation of Ramagundam in Andhra Pradesh and Neyveli in Tamil Nadu, the restoration of the Sharavathi project in Mysore to capacity, and the early completion of the Idikki project in Kerala. Then there can be a power pool in the South and shortages and excesses can be evened out.

Water: The central fact finding committee on the Cauvery referred to in the last issues of the Bulletin has completed its first round of visits to the Cauvery in Kerala, Mysore and Tamil Nadu. In Tamil Nadu the main areas visited were the Hogenekkal falls in Dharmapuri district, the Mettur Dam in Salem, the tunnel project and the grand anicut in Tirukattupalli and Tiruvalyaru in Thanjavur district and the problems examined were the nature of the irrigation system, the requirements of water, the crops raised, the acreage fed by the Cauvery. The statistical information required by the Committee will be available to it by the middle of August, so that the second and final round of consultation with Tamil Nadu and the other States will be held by the Committee at the end of August. The basic problem to be resolved is the interest of this State to protect and preserve its rather vast existing irrigation facilities and rights in the Cauvery and that of Mysore which wishes to extend its limited use of the river waters for developing its agriculture. The problems of rural water supply which are being attended to on a priority basis in the State's Perspective Plan and in the Country's Fifth Plan was the subject of intensive discussion and study in the Thanjavur district seminar at the end of July. Though Thanjavur, because of the Cauvery, has an abundant supply of water, due to lack of protection, it is an endemic disease prone area. There are 304 villages in the district without water supply. Further the effluents let into the Uyyakondan channel have damaged the paddy and plantain crops in Tiruverambur and neighbouring areas, and have caused the death of fish in the channels and disease to the cattle population. The provision of protected drinking water to each village is the responsibility of each panchayat which should provide 25 percent of the cost and will be aided by the State and Union Government and some of the aid programmes. One of the projects for control of pollution recommended by the Perspective Plan is being prepared for execution by the Tamil Nadu Water Supply and Drainage Board in collaboration with the Central Staff and Marine Chemical Research Station at Bhavnagar. A pilot scheme for desalination of sea water for potable purposes is to be executed at Porto Nuovo, South Arcot. In Israel with the help of Unesco, a similar project has produced successful results for both drinking water and for irrigation supply. The Porto Nuovo project can have far reaching effects for the State's water supply programme.

Finance and Resources: On September 4, Tamil Nadu and other State governments will announce the terms of their loans. They have 13 loans amounting to Rs. 84.21 crores outstanding. Last year the 15 State governments raised 12 year loans of Rs. 175.15 crores at 5¾ percent, receiving a net amout of Rs. 102.44 crores. For this year, taking into account their Plan projects for the last two years of the Fourth Plan, the loans may be around Rs. 200 crores. Even after meeting the Central loans in July for Rs. 140 crores, the resource position of the commercial banks, LIC, Unit Trusts and Provident Fund is ample to meet the State loans. Deposits are continuing to rise faster than advances and there is a continuing decline of the credit-deposit ratio, which is an unfortunate index of industrial stagnation. The State's small savings scheme reached 50 percent of its target last year, being Rs. 10 crores out of the targeted Rs. 20 crores. The drive is gathering momentum, last year's savings being double that of 1970-71. In this context, the banks are moving into the priority sectors in finding new business. The Central Bank of India is extending its extension counter scheme which was tried out successfully at the Vellore hospital, to industrial establishments, colleges and hospitals in Madras, Tiruchirapalli, Madurai and Coimbatore. It is also financing artisans, handicrafts, small scale industrial units and farming of ex-service men and their dependents. 700 of its 1,000 branches are in rural areas and its advances to agriculture amount to Rs. 41 crores and to small industrialists Rs. 40 crores. The Bank of India also has adopted 10 villages for intensive development in Tiruchirapalli, Madurai and Coimbatore districts, in addition the 2 Harijan villages near Madras. It lent Rs. 9.5 crores to 12,000 small farmers (holding less than 5 acres), Rs. 4 crores to small industrialists, Rs. 96 lakhs to 600 retailers and Rs. 20 lakhs to 300 self employed persons and professionals. These good priority investment activities tend to cluster around the same 3 or 4 advanced districts in the State. They need to be dispersed to develop the backward blocks. The Government reports a sharp rise in its revenue resources from the auction sales of liquor shops which amount this year to Rs. 32 crores—Rs. 16.70 crores from today shops against Rs. 9.02 crores last year, Rs. 15.34 crores from arrack shops against Rs. 6.59 crores last year and Rs. 4 crores from foreign liquor shops. Apart from this being the first full year of operation, this is an expanding source of revenue, particularly in certain districts. In toddy auctions, Coimbatore provides the largest revenue (Rs. 3.29 crores) followed by Thanjavur (Rs. 2.76 crores) and Tiruchi (Rs. 2.14 crores). In toddy auctions, Chingleput raised the largest revenue (Rs. 2.67 crores), followed by Madras (Rs. 2.62 crores) and Coimbatore (Rs. 2.45 crores). The Government has underway a programme for streamlining and rationalising the structure of the general sales tax and commercial taxes and their rules. This will involve a general review of the various commercial taxes Acts from 1959-60, the manner in which the Sales Tax Act, the Entertainments Tax Act, the Local Authorities Finance Act the Motor Spirit Taxation Act, the Betting Tax Act and their various rules could be simplified and rationalised and the identification of the lacunae in the Acts and rules. The results of this important and useful review will be to make administration easy, reduce hardship to the trading community and make tax evasion difficult. For the Fifth Plan, the resulting rationalisation would be one means of ensuring the additional resource mobilisation needed.

Housing and Anti-Untouchability Measures: The Tamil Nadu Central Cooperative House Mortage Bank is to be converted into an apex society to raise loans and disburse them to the cooperative house construction societies. In fact the merger of the Slum Clearance Board with the apex bank is also under study. In this connection, the State has

made a strong appeal to the Union government to extend the slum clearance assistance programme from the present limit to cities with a population of over 8 lakhs to these with over 3 lakhs so that the slum problems of cities like Coimbatore, Madurai and Tiruchi might also be dealt with. The State rural housing plan, which for Thanjavur district amounts to Rs. 6 crores (See Vol. II No. 7 of the Bulletin) amounts to Rs. 10 crores for the State. Rs. 8 crores is requested from the Union government and Rs. 2 crores will be raised by the State. For its slum clearance programme, the State expects the Union government's assistance of Rs 2.5 crores for this year. To assist the house building programme, the Union Steel Ministry is setting up a committee in Madras (similar committees exist or are to be set up in Delhi. Bombay and Calcutta) to assess the steel needs for house building in the city and make the necessary allocation. This is badly needed in Madras because with the recent rise in prices of steel billets, rods, structurals and rails and the price differentials between the producers stock yard and open market prices being as much as Rs. 600-700, everyone—the consumer, the trader, the supplier–is suffering and is confused. In this connection the decision of the Union government to allot 2 lakh tonnes of rails for rerolling and market it through the stockyards will provide some relief. The steel price rise problem is serious for Madras because building activity is the highest in this city in the whole Country, with individual houses being built by small owners with cooperative and other loans while in other cities building activities are undertaken by commercial and industrial houses. The planning and development of the Madras Metropolitans area and the 3 satellite towns at Gummidipundi in the north, Tiruvallur in the West and Sungundrum in the South described in the last issue of the Bulletin has been the subject of a first round of consultation with the city's industrialists organised by SIPCOT. There was the usual resistance to any new plan and there was a general feeling against shifting existing industries to the satellites. There was also emphasis on the need to develop sound infrastructure, raw materials and labour supply, including housing for staff and workers, the development of industrial estates and the location of new industries under such condition in the satellite towns and desirability of phasing their development. Water (through the Veeranam water supply) and electricity will be no problem in the three towns. The development of the towns as satellites involves their being both independent in the first phase and becoming part of greater Madras at a later stage. The SIPCOT management has all these complex issues under study. The plan itself is sound and must be supported. A similar scheme for the development of Tiruvottiyur, a fast growing suburb of North Madras involves (a) a Rs. one crore drainage scheme in an area where there are not even open drains. The sewage programme which will be completed in five years will use the sewage after treatment in a vegetable farm. (b) A Rs. 17 lakh protected water supply scheme to replace the present 52 public taps with 1000 house service connections and the supply of protected water to major and minor industries. (c) Rs 50,0C0 for street lighting and electrifying the slum areas. (d) A modern cattle shandy to replace the unhygienic private shandy now in use with its monthly turnover of Rs. 2 lakhs and (e) a programme to combat and contain the air pollution caused by the factories. There is need for such an area development programme for every town and municipality in the State. Two development projects assisted by the Union government are the grant of Rs. 5.55 crores for strengthening and widening the two lanes of traffic on the National Highway No. 7 (Madras-Tiruchi) and the byepass road at Bhavani and Kumarapalayam in Coimbatore and Salem districts. This is part of the Rs. 41 crores Fourth Plan provision for the development national highways, which supplement the

rural road plan referred to in the last issue of the Bulletin. This programme is the essential development infrastructure of the State. At the present rate of Union allotment and approval, it is likely that only a little more than half the Fourth Plan provisions will be disbursed. Another central initiative is a project for the integrated development of the Western Ghats regions in which Tamil Nadu and the States of Maharashtra, Mysore and Kerala are involved. Each State is being urged to demarcate the area for its care and development and to set up a cell to collect, collate and sift the development data for transmission to the Union Planning Commission.

The State has set up special police squads in each district head quarters town to discourage untouchability and punish those who practice it. The prevalence of untouchability 25 years after our independence and after it was banned is a social menace and a development bottleneck. Once again this State is in the lead in combating this evil. To counter housing discrimination against Harijan teachers in the villages, Rs. 30,000 has been allotted to Thanjavur district for houses for these teachers. In the long run as proposed in the first publication of the Madras Institute of Development Studies,—Income Earning Trends and Social Status of the Harijan Community in Tamil Nadu,— it is through developing common housing programmes in the rural areas as in the urban slums, that this stain on our society and obstacle to development can be overcome. The slum housing programmes show that, alas, poverty is a cure to many of our social ills. There is there little or no discrimination.

National

Prices and Central Loans: The wholesale price index on July 6, 1972 stood at 200.1 at the 1961-62 base, representing annual average compound rate of increase of 7.5 percent. This doubling of wholesale prices over the last decade has meant an even sharper increase in retail prices and constitutes a setback to the development efforts of the country. It means that one of the four objectives of the Plan, stability, has not been achieved. Within the general rise, the rise in food prices have been the sharpest, increasing by 12 percent during the year. Industrial raw materials prices have registered a decline by around 4 percent, while those of both fuel and power machinery and transport equipment rose, making the industrial goods price index rise by 4 percent. The major cause for this inflationary situation is the surplus money chasing too few goods and services and the heavy deficit financing of the government. This can be seen in two factors. First in 1968-69 the GNP rose by 2.5 percent and the money supply rose by 8 percent. In 1969-70 the comparative figures were 5.2 and 10.5 percent, in 1970-71, 4.7 and 11.7 percent and in 1971-72, 3 percent and 12.7 percent. With this large monetary supply it is not surprising that the three central loans in July calling for Rs. 350 crores were over subscribed to Rs. 386 crores, with a net diversion of Rs. 140 crores after allowing for repayment of maturing past loans. The cash subscriptions this time were the largest ever and there is no real decline in Rs. 50 crores cash excess in the hands of banks. A second index is the source of bank deposits on the one hand and the distribution of increasing money supply on the other. The deposits of all nationalised banks came up to 80 percent from 3 States and from their urban areas. Their advances are also similarly unevenly concentrated, Tamil Nadu for example having over 100 percent of its deposits. In fact there is a heavy transfer of finds from the rural to the urban areas through bank activities and this transfer amounts to Rs. 174 crores in the case of the nationalised banks alone.

This also explains the results of Thompson rural market index according to which rural purchasing power is expected to treble between 1967-68 and 1974-75, the additional rural incomes rising from Rs. 1,500 crores to Rs. 4,600 crores in that period. There are inter-State and inter-district variations in this trend, with Midnapore district in West Bengal, Shahbad in Bihar, Thanjavur in Tamil Nadu and Hissar in Haryana being in the top ranking of 100 to 94.23 percent. Tamil Nadu has 6 of the 18 Grade 'A' markets and U.P. with the largest State population accounts for 15.4 percent of the country's rural purchases and national consumption. This rate of expansion of rural money incomes is around 10 times the rate of increase in national production and rural availabilities of goods and services. The inflation in the last decade has hit the industries, fixed income holders and the rural families hardest. The other cause for the price spiral is deficit financing for which the Reserve Bank lent the government Rs. 584 crores in 1970-71 and Rs. 654 crores in 1971-72. In 1970-71 the central deficit was Rs. 285 crores with a surplus of Rs. 47 crores from the States. In 1971-72 the States had a deficit of Rs. 254 crores and the Centre's ran to Rs. 385, making a total deficit of Rs. 640 crores. For the current year the situation is worse. The State's deficit is expected to be Rs. 112 crores and the Centre's will be far in excess of the budgetted Rs. 240 crores. While deficits are mounting development expenditures are always short of the target—by Rs. 236 crores in 1969-70, by Rs. 160 crores in 1970-71. Public sector investments have ranged between 7-8.5 percent of GNP instead of the Fourth Plan target of 11.5 percent. Thus increased money supplies, mounting deficits and low capital goods demand and low production are the back drops to the serious inflation outface. All three must be corrected.

National Production Front: The industrial deceleration referred to in the last issue of the Bulletin is the major preoccupation of the country. The new minister of industrial development on assuming office called attention to last year's industrial growth rate which he places at a low 1.5 percent. The performance of 17 public sector undertakings have been the subject of a frank review in mid July. Their losses for 1970-71 total Rs 11.92 crores and they have used up over 75 percent of the project allotment of foreign exchange. (Rs. 96.65 crores out of Rs. 120 crores) while earning only Rs 63 lakhs in fereign exchange. The time lag in three groups of new projects going into production is lengthening, increasing the preparatory costs and throwing out of great production units dependent on them. The Rs. 10.68 Allahabad Bharat Pumps and Compressors was to go into production at the end of 1971 to meet the need for heavy compressors and special pumps needed by the fertiliser, steel, petro-chemical and chemical industries. Now it will not begin operations till the beginning of the Fifth Plan. The Hindustan Paper Corporation with its 30,000 tonnes a year Nagaland units and 70,000 tonnes a year Assam units will not go into operation till 1976. The six new projects costing Rs. 21 crores of the Hindustan Machine Tools planned to produce tractors, printing machinery, watches, dye casting and plastic injection moulding machinery have not yet got off the drawing board stage. The Bhopal BHEL plant losses referred to in the last issue of the Bulletin and those of Hindustan Photo Films whose cumulative losses (Rs. 9.32 crores) exceed its equity capital (Rs. 5.82 crores) are further examples of the parlous state of the public sector undertakings which are working below capacity, unable to provide for depreciation and modernisation. The steel industry continues in a bad way. Its losses were analysed in Vol. II No. 7 of the Bulletin. The Government's expectation to achieve self sufficiency by the end of the Fourth Plan, (repeatedly proclaimed) which means a production of 7.2 million tonnes this year and some 12 million

tonnes by the end of the Fourth plan and 19 million tonnes by the end of the Fifth Plan (Vol. II No. 6 of the Bulletin) is nowhere near realisation. In fact instead of the expected increases in production this year by one million tonnes, the first quarter returns show for Hindustan Steel that the increase is 8.74 lakh tonnes against 8.92 lakh tonnes in the first quarter of last year. While Bhilai has shown a small increase, there were steep declines in Durgapur and Rourkela. TISCO is raising its production by one lakh tonnes, but IISCO reached such a low level of production of 6.17 lakh tonnes against a capacity of 10 lakh tonnes, that the Government has taken over its management for an initial 2 year period. IISCO's ills are deep seated tracing back to equipment rundown, labour unrest and managerial lapses. But the government take over of IISCO is not going to improve its production performance this year, nor avert its losses of Rs. 3 crores for this year. On top of all this, the Bokarao plant which was to start production in June of this year with the first blast furnace complex, will need another 12 months to reach this first phase and probably another year before the entire plant can go on steam. The result is that we are this year exactly in the same position in steel production and steel imports as last year and instead of importing Rs. 40 crores of finished steel as announced at the time of the budget debate to close the gap between internal supply and demand, our import will be like last year, Rs. 200 crores. Under these conditions the decision to set up the Steel Holding Company which will manage the four public sector corporations in the department of steel and four in the department of mines covering a capital investment of Rs. 1000 crores is wise. The company's chairman who will also be secretary to government will be the decision making centre. The corporation will own all the shares in the public corporations, in the joint sector firms and act for the public sector financial institutions in private sector units. If it can streamline and rationalise the operations of the producing firms, expedite the new and expansion schemes, and move production fast and forward, it might still be a means of improving our steel performance. The other decision which can help is joint consultation and coordinated action of the five economic ministers at the Centre—industrial development, planning, steel and mines, railways and foreign trade. To this group should be added the Minister for power. Major policy questions will still be in the hands of the economic policy committee of the cabinet which should now turn to updating the 1956 industrial policy resolution, defining clearly the place of the joint sector, simplifying the licensing policy and clarifying the application of Monopolies Act. What is needed is for the six ministers to coordinate the industrial decisions, reduce delays in inter-ministerial and inter-departmental approvals and move industrial production forward. There is no need to wait till the 25th anniversary to operate the industrial units seven days in the week and use their capacity to the full. The yawning gap between issuance of letters of intent (which themselves take a long time sometimes upto 2 years) and the setting up and start of production of these units can be reduced by this group. In 1967-70, 42 letters of intent were granted and only 6 used and since 1970, 120 have been granted and few used. Another area where speedy action is needed is in the fixing of prices. After a two year lapse, prices have been increased for three steel categories billets by Rs. 80 per tonne, bars and rods by Rs. 85 per tonne and structurals by Rs. 50 per tonne. This will help TISCO, IISCO, Bhilai and Durgapur. It was long in incoming, is much below what the producing units had made a good case for, and will further act as an inflationary force. The possibility of reducing the excise duties on steel should surely have been examined as an alternative. The fertilizer units are also facing a similar escalating cost situation and a low utilisation capacity of a little over 60 percent, due to non-availability of raw materials. Since 1967, costs in this sector have gone up by Rs. 232 per tonne of

urea and the price by Rs. 119 per tonne. Here again a decision must be made to meet the cost factor of the industry so that the fertiliser input in the new agricultural technology is not slowed down.

On the agricultural front, the delay in the monsoon has produced drought condtions in parts of Andhra Pradesh, Mysore, Uttar Pradesh, West Bengal, Bihar, Tripura and Rajasthan The kharif crop of wheat, pulses and groundnut in Western Madhya Pradesh and the paddy crop in Chattisgarh have been severely affected. 50 percent of Rajasthan kharif sowing has been held up and the jute and rice crop of West Bengal have declined sharply. This is serious because the kharif season accounts for 70 percent of the total farm output. The special summer crash programme of rice production in Andhra Pradesh, Madhya Pradesh, Bihar, Kerala, Mysore, Uttar Pradesh, Haryana, Orissa and West Bengal which was expected to yield an additional one million tonnes of rice has failed in the northern States due to excessive summer heat and drought conditions. To make up for this shortfall, the production of other cereals, particularly coarse grains have not noticeably increased. The forecast in Vol. II No. 6 of the Bulletin of 112 million tonnes of food production for 1971-72 will not be realised. It is more likely to be 104-105 million tonnes, some 2-3 million tonnes lower than for 1970-71. It is at this point that our buffer stocks of around 10 million tonnes of cereals can be brought into play both to assure food grains to the deficit States and to keep food grain prices from rising. The distribution network that will now be set up should be part of the long term plan to ensure low priced goods distribution to the poor. Through June and July, market arrivals of wheat and rice have been satisfactory, as have been the progress of procurement operations, which built up buffer stocks as at the end of June by over 9 million tonnes. In this situation the agricultural development programme needs to be further intensified. Immediately as much as possible of the kharif crop should be saved and the rabi acreage greatly expanded. The increase in the total irrigable area by some 26 million hectares by 1973-74, as analysed in the last issue of the Bulletin, is an urgency. In this programme priority must be given to drought prone areas. On the one hand there must be full utilisation of the irrigation potential created (vide the Nagarjunasagar project where canals or lands were not ready) and on the other hand there must be full development of our ground water potential. We have the resources-financial, manpower and the machinery and decisions agreed upon at Srinagar conference on our water resources must be put into effect. Again in regard to rice, the high yielding varieties suited to different soil conditions in the various States have now been established. The rice mini-kit programme which supplies seeds of two-three rice varieties to some 5000-6000 farmers in each State is now operating well. High yielding varieties of wheat, cholam, cumbu, rice, maize breeding and millet improvement, mixed cropping and integrated cropping and multiple cropping have all been established. What is now needed is a strong extension service which can carry the results of these experiments throughout the country. The proposed drive for integrated pest control in rice, cotton, sugarcane and groudnut, using biological methods, radiation and sterilisation techniques and genetic and agronomic approaches, in addition to chemical pesticides will both save a great deal of production waste and control pollution. For all this our agricultural universities and the newly developing agriculture polytechnics must provide the manpower, and the country must devise an information programme through radio and both satellite based and terrestrial TV that will carry the message to the farmers. An important infrastructure for this programme would be the rural banks proposed by the Banking Commission which could be cooperative rural banks, rural banks

jointly owned by the nationalised banks and the villagers or rural banks jointly owned by the nationalised banks and the cooperative banks. If the nationalised banks can reduce their rural branch bank overheads and join together with the few effective co-operative banks, a new type of rural credit institution could be built up on solid foundations to provide the farmer with his needed input. The developing agricultural programme has important social and health implications. It has helped with genetic up grading of the nutritive quality of our food grains. Here again this research result must be conveyed to the people in the villages and slums and the anti-social forces that both engage in food adulteration and promote it by being carried away with the seeming cheapness of the article, must be combated.

Railways and Roads: The serious problems on the production and distribution front created by railway wagons management have been referred to in Vol. II No. 5 and the last issue of the Bulletin. The railway bottleneck has been officially referred to by the government as the cause for cement shortage, fertiliser scarcity, hampered food procurement and more recently the drastic thermal power cuts imposed all over the country. The railways at their July zonal managers conference, and more recently under the direction of the new minister for railways, have reviewed this disquieting situation and decided on lines of corrective action. The railways with a wagon stock of 4.75 lakhs carried 2.1 million tonnes more of revenue earning traffic in 1970-71 (amounting to 167.9 million tonnes) but could not convey the further 6.9 million tonnes requested of it. The main problem is that railway wagon stock of the country assumes normal conditions of production, stability and growth. But in a vast and complex sub-continent like ours, conditions are never and will never be normal. Taking the last and current years, there was the drought and heat waves followed by floods which made loading and unloading of wagons time consuming, increased the demand for coal by our thermal stations and severed railway communications in important producing and consuming areas. There was also the improved agricultural performance leading to stopping of food imports but requiring much larger haulage of food grains procured in Punjab and Haryana which had to be conveyed to distribution points in Kerala, Mysore and Andhra Pradesh. There is also the varying law and order situation in this vast country which has led to heavy losses from thefts of goods carried in the wagons and even wagon spare parts. And finally there is the poor utilisation of wagons by the government and private consumers and the lock up of engines and wagons in Bangla Desh to which 4.2 lakh tonnes food, 30,000 tonnes of fertilisers, 40,000 tonnes of coal and 12,000 tonnes of cement have been transported. And now the railways will have to carry the buffer food stocks to fair price shops all over the country. In light of all this the decisions to improve the stock and use of wagons by the railway authorities are timely. It is estimated that by the end of the Fifth Plan, the originating freight traffic will be 280 million tonnes, involving a 30 percent increase to 185 million net tonne kilometers. Passenger traffic will be increased by 3 percent per annum. Hence in addition to current orders for 27,000 broadgauge and 2,900 metregauge wagons, an additional 8,000 wagons are to be ordered. Second with the improvement of the law and order situation in West Bengal, wagon haulage will be increased to 180 million tonnes of revenue earning and 28 million tonnes of non-revenue traffic this year. Third special working group of the Railway Board are working to improve freight traffic, passenger traffic and a long term corporate plan, which will use to the full the technological developments in this area. The new minister is also proposing to abolish or make less easy payment of demurrage, with a view to speeding up the unloading of wagons by govern-

ment and private users. In 1968-69, 80 percent of wagons were released the same day, but last year the percentage was only 60. Calcutta and Howrah are the points where there must be a rapid improvement in wagon use. Finally the minister also proposes to transfer to coastal shipping, the haulage of coal wherever possible and so release wagons for other traffic. These measures must be executed speedily to help the country to pick upon its lagging industrial growth, in addition to the agricultural setback it is facing for the season,

The parallel roads facilities in the State were discussed in the last issue of the Bulletin. With the non-availability of railway wagons, increasing quantities of coal, ores, cement, oil seeds, sugar cane, raw cotton are being hauled by roads. The roads programme has another important aspect in being one of the sectors with highest employment potential. Against this double imperative, the highways and roads programme has been so far merely limping along during the Fourth Plan. Out of the Plan allocation of Rs. 418 crores, in three years less than 28 percent has been spent and plans are under way to spend Rs. 100 crores each year for the last two years of the Plan. This represents a doubling of the rate of expenditure and is the kind crash effort which leads to poor planning and poorer execution. The obstacles to the execution of this important programme are capable of being selected. First a decision should be made about the Central Road Fund. Should it be maintained as demanded by the Union and State Transport ministers and the Transport Development Council or should it be abolished as recommended by the Administrative Reform Commission? It matters little what the decision is. What matters is that the rate of accrual from the surcharge and the excise levy on motor spirits which has remained stationary at 16 paise per litre, so that only 3 percent of total accruals are available to the Fund should be increased and the demand for a surcharge on diesel oil should be immediately met. In other words the resources for this employment generating, growthinducing sector should be doubled. The States on their side must set up a well knit organisation for preparing road projects carefully and executing them speedily. The dearth of good contractors can be met by setting up both departmental construction units and the large number of civil engineers and technicians in such independent units. There is also a shortage of road rollers and bituminous pavement equipment. Here the Ministry of industrial development must step in, both to increase indigenous production of the machinery and, for this year, import road rollers. Under such conditions, the roads programme can keep pace with the targets envisaged in the Plan.

Foreign Trade: After all the confusing statistics from several government sources, the Ministry of Foreign Trade now announces that exports increased in 1971-72 by 2 percent as against the Plan target of 7 percent. It cushions this disastrous announcement with the information that the compared rate of growth for the first three years of the Fourth Plan was 5 percent (1969-70, 4 percent, 1970-71, 8.3 percent and 1971-72, 2 percent) and that the first two months of this year recorded an increase in exports of Rs. 57 crores, yielding a trade surplus of Rs. 38 crores. The export performance last year was so poor (Rs. 567 crores) that our trade deficit shot up from Rs. 90 crores in 1970-71 to Rs. 286 crores in 1971-72. As for the record export performance of April and May this year, that figure includes our exports to Bangla Desh which are grants as well as loans, and which had to be undertaken for our neighbour, a record output of gunnies which will not continue with Bangla Desh's resumption of her jute exports and some seasonal decline in our imports. In other words our export trade is in a very bad way comparable to our industrial growth

performance, and a special effort has to be made if we are to increase our exports by over Rs. 120 crores as required by the target. The base—the only base—for our improving ours export performance is improved and increased industrial production and agricultural output as noted earlier. Second the foreign trade ministry is planning to introduce a compulsory export programme in a wide variety of industries. In this connection, the Indian Cotton Mills Federation has decided that all composite mills in the Country would have to undertake to set apart 7 percent of their production for exports. But the ministry is thinking in terms of making such a programme obligatory on producers and of bringing about a reduction in domestic consumption. What is practical in this proposal is to promote more of export oriented units, to increase the profit margin of the export goods produced and make available inputs to exporters at internationally competitive prices. Third there is need to undertake an aggressive campaign of export promotion. With the normalisation of relations with Pakistan, the first area where export promotion should be planned is in the Ecafe area, particularly Pakistan, Afghanistan, Nepal, Burma, Sri Lanka, Malaysia, Thailand and Indonesia. Trade with Pakistan which had dwindled almost to nothing in the sixties can now be resumed in certain areas of interest to the two countries. India can import sui gas from Pakistan for use in Gujarat and India can supply coal to Pakistan. Other commodities to be explored are cotton, engineering goods, coffee, tea etc. With other Ecafe countries, India can export consumer goods, machinery, machine tools and equipment needed by their development programmes. Each country's development plan must be carefully studied and Indian firms jointly or singly should meet the infrastructural needs in railways and irrigation of these countries. Also adequate arrangements should be made for after sales service and Burma, Cambodia and Thailand will have to be offered new trading opportunities in India to compensate the stopping of their rice exports. In addition to the export of traditional items like textiles and jute, engineering goods exports should be further expanded. In the case of Japan, Australia and New Zealand, our labour intensive industrial products can meet the gaps in their rising wages, labour short economies. Finally the ECM—India trade negotiations under way need to be pursued vigorously and broadened. The initial trade offer of the Commission secretariat of a non-preferential tariff covering tea, pepper, spices, leather and skins and items which are part of the existing bilateral agreements are only an opening and a very small outlet at that. The ECM draft for instance contains no provision for tariff reductions. It provides for both sides eliminating existing tariff and para tariff barriers in agreed areas. As the agreement is non-preferential, it will benefit other countries more. But the Commission secretariat is aware of the importance of ECM trade and stakes in India and so the cautious first draft can be expanded to cover not only silks and handicrafts but other non-traditional items. The ECM with its 10 member countries controls 40 percent of world trade, and here is a major area for expanding our trade in consumer goods, manufactures and semi-manufactures. There needs to be a similar country by conntry approach to Africa and Latin America which are neglected regions.

Aid: Under the Colombo Plan, India makes the largest Asian contribution to its members among developing countries. It has contributed 59 percent of the aid from the Asian developing nations. It provides 50 percent of the total foreign aid to Nepal's Fourth Plan amounting to Rs. 46 crores, mainly in the areas of agriculture, education and community development. Bhutan has received Rs. 20 crores for its development programmes. Rs. 43 lakhs of farm equipment and livestook have been made available to Sri Lanka, Vietnam, Burma and Afghanistan. 4,994 fellowships in forestry, agriculture,

power and fuel, public administration, statistics, banking, fisheries and small scale industries have been made available to experts from Nepal, Sri Lanka, Malaysia, Thailand, Philippines, Afghanistan, Indonesia and Burma. 204 Indian specialists in marine engineering, hydraulic surveys, cooperatives, fisheries and small scale industries are serving in these countries.

In reverse, as part of the Aid-India consortium, as reported in the last issue of the Bulletin, India and Netherlands signed at July end an agreement to meet the country's development needs with a credit of 58 million guilders (Rs. '4.16 crores) repayable in 30 years at 2½ percent interest with an eight year grace period. With Switzerland which is not a member of the consortium, India will be signing a soft loan agreement (on terms similar to those of IDA) for 60 million francs to be used for the irrigation and power projects at Obera and Sultanpur, for tap changers and locomotives and a polyester filament yarn plant at Koyali. In addition, a commerical bank credit of 25 million francs is being made available to help modernise our textile industry to produce terelene fabrics on a large scale. With the U.K., India has signed a loan agreement for £.5.042 million for the purchase of a tanker. The interest free loan is repayable in 25 years with a seven year grace period. This is part of the govenment's programme to expand its shipping fleet, so that by the end of the Fourth Plan, Indian ships will carry about 40 percent of our overseas trade. There is still the question of debt relief to India which the Aid India Consortium will be discussing. The World Bank has recommended debt relief of $ 200 million each year for this and next year and this has to be debated between the members of the Club. Our total debt servicing is around Rs. 450 crores and the objective of self reliance must take this large obligation into account in the Fifth Plan.

Bangla Desh: Bangla Desh's total budget for the year is Rs. 786 crores, of which Rs. 501 crores is for the development and rehabilitation programme. The main sources of revenue are customs (Rs. 125 crores), excise duties (Rs. 64 crores), sales Tax (Rs. 40 crores) and foreign aid (Rs. 375 crores). Rs. 185 crores of total loans and grants are already committed and an additional Rs. 141 crores are under negotiations. India aid, other than food grains, in the pipeline are Rs. 41 crores and under negotiations are a further Rs. 21 crores, making a total of Rs. 62 crores for the current year. In addition to the 7,81,400 tonnes of food grains already supplied, a further 50,000 tonnes of wheat from Punjab and Haryana have been rushed to reach the needy areas by mid August. Rs. 1.5 crores worth of tobacco out of the Rs. 10 crores in the agreement have also been exported to the country. The rate of execution of the trade and aid agreement between the two countries is satisfactory.

International

World Economic Survey: The United Nations World Economic Survey records a continuing economic slow down in 1971, with a growth rate of 4 percent. Against the back drop of the international monetary crisis, the countries face serious problems of inflation and unemployment, but avoided an outright recession. The international monetary crisis threw up five related issues—the future international currency unit, the role of gold, the dollar, the SDRs and the adjustment mechanism for deficit and surplus country. No progress was made in trade liberalisation for the developing countries

in the year. The GDP growth rate was 3.4 percent for the developed non-socialist countries, 6.4 percent for the socialist countries of Europe, 10 percent for the Peoples Republic of China and 5.4 percent for the developing countries. Developing countries of Latin America recorded a 6.5 percent growth, Africa 4.5 percent, West Asia 7.7 percent and South and South East Asia 4.5. India's rate of 3 percent was one of the lowest among any of the countries, developed and developing, and was less than one third that of the only comparable country—China.

Asian Railway: Parallel to Asian Highway project now nearing completion, Ecafe has proposed a 14,500 kilometer Trans Asian Railway that will link Istanbul with Singapore and Indonesia. Using existing railway facilities the additional new construction called for by the project is only 1400 kilometers. The main gaps to be filled in are between Burma and Thailand and Pakistan and Iran. The project is economically viable. It will shorten and replace current costly and circuitous coastal and maritime transportation. Ecafe countries' exports have suffered from increased shipping fares and the closing of the Suez. The saving in distances through the proposed railway net work is considerable. Compared to the sea route, Bangalore–Calcutta will save 1885 k.m., Calcutta–Istanbul 12,018 k.m and Calcutta-London 8,112 k.m. The railway project will also make possible the rapid distribution of containers from ships to the interior. With the Asian Highway, the Asian railway will not only expand inter–Asian trade, it will be a major force in Asian economic integration.

International Monetary Situation: The three developments in the international monetary situations analysed in the last issue of the Bulletin continue unchanged. First the pound sterling continues in effect devalued in terms of the dollar by around 7 percent. In consequence the rupee stands effectively devalued by 6 percent in terms of major non-sterling currencies and revalued by 0·89 percent in terms of sterling. The floating of the Rupee with the pound gives rise to prospects of selective devaluation and for multiple exchange rates as a means of helping forward the country's lagging export trade. The devaluation of the Rupee vis a vis non sterling currencies has not helped the exporter because of the weak position of India's exports and the complex nature of exchange and parity transactions. It is not in any of India's interest to move in the direction of selective devaluation or multiple exchange rates unless it is a part of wider structural decisions on the country's political and economic relations with other countries. The second factor relates to the price of gold which has moved up from $66 per ounce noted in the last issue of the Bulletin to $70 per ounce at the end of July. Gold is slowly defining for itself a non-role in international currency matters. The only advantage of its soaring price is that the margin on its smuggling has declined. The third factor-monetary reform-has witnessed some developments. The member States of the International Monetary Fund have ratified the proposal for the Committee of 20 of its Governors. The Committee is now being constituted and will meet in the last week of September. It will review and recommend the amendments to the international monetary system, and the related issues of trade, flow of capital investment and development assistance. The London meeting in mid July of the ECM finance ministers including the four new members discussed an 8 point plan for international monetary reform. The outcome of these discussions are both vague and disturbing. The agreement on 'fixed but adjustable parities" seems too much like eating one's cake and keeping it too. Does this mean frequent parity changes? What does it mean in terms of the devaluation of the pound, the revaluation of the

mark and the position of the franc? What does the principle of equal rights and obligations for all countries mean in relation to the developing countries? There is some lip service for paying attention to the interest of developing countries. What attention and how much interest? In a sense it is a good thing that there was no clear and firm agreement at this meeting which controls so much of the economic destinies of the world. In fact, with the conclusion of the July agreement between the enlarged 10 nation common market and the six West European countries of Sweden, Austria, Portugal, Iceland, Finland, Switzerland and Lichtenstein, a huge and powerful free trade area comprising 300 million affluent people came into being. In this area any article of any of the 16 countries can be sold freely without duty in any of the countries. There will be preferences for their farm products. The developing countries thus face another insuperable barrier to the expansion of their trade. The agreement will also create serious problems for the United States and Japan, who may now become partners with the third world in the International Monetary Reform discussions that will be undertaken in the days ahead, as pointed out in the last issue of the Bulletin.

Follow up of Stockholm : At the first congress of the International Solid Wastes and Public Cleansing Association held at the end of July in Prague with 1400 delegates from 34 countries, some rather impressive facts of waste disposal were recorded. Every European produces 2.25 lbs of solid household waste a day and an American 4.50 lbs per day. The first major problem is rubbish collection. Collection requires larger bins, larger trucks adding to noise and road congestion. The second problem is waste disposal. London produces 10,000 tonnes of solid household waste which must be (a) recycled, which means using its organic substances and returning them to nature. About 50 percent of all waste can be turned into humus, a natural manure which is far more beneficial to the soil than any of the artificial manures. Jersey and Netherlands have used humus to reclaim their barren soils, France and Germany use it in their vine-yards. Because of its expense only 5 percent of waste in the world is recycled; (b) burning waste is more common and though expensive, produce heat and steam for houses and factories; (c) tipping is the common disposal method which, unlike in India, if planned and coordinated with landscaping schemes, can be a positive help. Frankfurt has a hill made of waste with complete skiing, tobogganing and other recreation facilities. Wastes can be dealt with by trained sanitation experts. Another post Stockholm development is the U.S. National Aeronautics Space Administration's first satellite launched at the end of July which will study pollution sources and provide data that could provide breakthroughs in agriculture, forestry, geology, hydrology, oceanography, meteorology and ecology. It will detect sources of pollution and contribute towards the elimination of certain insects without the use Pesticides, measure the quality of water, the progressive growth of urban centres and help in the planning of roads and transport systems.

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Agricultural Development;

Sowing Season: The hot summer and the two weeks delay in the monsoon have made for a late Kuruvai start in the southern parts of the State. Plans are underway to extend the high yielding variety paddy programme from the 51 lakh acres referred to in Vol. II No. 7 of the Bulletin to 55 lakh acres. The programme will be split 50:50 as

between the Kuruvai and Samba seasons. Kurvai cultivation has got under way in the Cauvery basin as by the end of July as the water level in the Mettur reservoir had attained more than the normal level. The Samba sowings in the northern districts covering 4.5 lakh acres of the State face further delay. The deciding factor however will be the north east monsoon which supplies tank irrigation water to 23 lakh acres and well irrigation to an additional 18 lakh acres. The HYV strains to be used this season include not only I.R-8 and I.R-20, but I.R-24, Kannagi, Karigalan and Ponni, which call for a steady and prompt supply of inputs to the farmers, training of extension officers and farmers in the use of these inputs (which is now underway) and the release in sufficient amounts of the needed fertilisers by the Union government. With the paddy shortages in the northern States referred to earlier, a special intensive effort is called for by Tamil Nadu to make up for any rice deficit that the country may face. In the meanwhile the government has from early January withdrawn the 18 per cent paddy levy from the North Arcot, South Arcot and Tiruchi districts. The 25 per cent levy in Thanjavur and 15 percent in Kanyakumari; Tirunelveli and Madurai continues. The government rice stocks are comfortable and exceed 1.3 lakh tonnes. Other food crops to which special attention is being paid include cumbu and pulses. The area under hybrid cumbu will be doubled from last year's 5.5 lakh acres to 11 lakh acres. Similarly improved varieties of pulses are being grown in some 1000 demonstration areas of 30 to 40 acres each, including 30 seed farms which are growing the improved varieties of pulse seeds. In the Tiruvarangalam Vemban forest, new pulse varieties of short duration, high yield and amenability to cultivation in all seasons are being grown. The Aduthurai research station is also developing short duration pulses which can be grown in rice fallows.

Improved Varieties: Pulse varieties are being rapidly improved. Rajendran, a green gram which can yield in 65 days 250 kgs. of grain per acre as a June/July dry crop as well as another green gram variety, JB-20 with an yield of 700 kgs. per acre have been released by the Department. A new red gram J.R.-14 which yields 800 kg. per acre and other high yielding grams are under trial. These pulses can be grown as mixed crop with groundnut. The Kudumiamalai research station has produced the red gram T.21 which yields in 112 days 1398 kg. per hectare when sown in September and 1,600 kg. per hectare within 100 days when sown in February. All these improved pulse varieties require prompt and regulated dosages of NPK, which have also been worked out. The Tamil Nadu Agricultural University's research programme has also made its contribution to the improved varieties. CO-10, a short duration ragi is non-lodging, high yielding and non-shattering, produces over 50 percent more than the local variety and can be sown in any multiple cropping programme. CO-2 samai is another millet which yields within 85 days, is drought resistant and can be grown at early and late sowing in the districts of Dharmapuri, Salem, Coimbatore, North Arcot, Madurai and Tirunelveli. CO-1 sapota is an early bearing hybrid that can be grown throughout the State and gives on an average 200 fruits per tree. CO-8, a country bean, yields from the 60th day, requires to prop, grows as a dry or irrigated crop and produces 5-10 percent more than the local variety. The seed farms in the State are also developing fast. The Chengam Farm with its current 2000 acres which has doubled its area (See Vol. I Nos. 9 and 10 of the Bulletin) and some 12 wells is producing Rs. 4 lakhs of food grains goods and oil seeds and will be expanded by a further 8,000 acres and 200 wells in a year. It also serves as a good demonstration centre for the neighbouring farms and provides them with ploughing, spraying and marketing services. The Department is establishing 12 more

seed processing units in addition to the existing 18, about half of which produce eight tonnes of HYV seeds per day. All these farms serve as effective demonstration centres. The Tindivanam research station runs in addition an effective extension service to explain the high yielding groundnut seed, TMV-10, which will spread its cultivation in the Cuddalore taluk from the present 100 acres to 1,000 and also extend the minikit programme for sun flower production. The Mangadu extension programme also covered all aspects of cropping, the use of inputs, and credit and marketing in a single package, so that extension services can be packaged and spread through the State to promote intensive agricultural practices. Following the Thanjavur pattern (720 centres), 250 farm extension centres are being set up in Chingleput district. Through these centres, modern and improved methods of cultivation in a field oriented manner are spread, using oral and audio visual technique. Fertiliser dosages, seeds treatment, plant chemicals, irrigation needs are explained simply with every day appliances like empty kerosene tins. Through the centres, detailed guidelines on agricultural inputs in different areas and the monthly calendar of farm operations are made known In turn these centres help the district officers attain a realistic and accurate assessment every quarter of the needs for seeds, fertilisers, plant protection chemicals, farm equipment and credit for the area. The extension centres are becoming a powerful tool for improved agricultural performance in the State.

Cash Crops: The marketing of cotton in the State has presenting some problems in Thanjavur. Cotton was grown in the last season over 7,000 acres in the district, as one means of diversifying the production pattern of the district. For the current year it is planned to double the cotton output in the district, by growing it over 15,000 acres. The producers in the district have some stock in hand, have no ready access to cotton markets and the off take price is a matter needing attention. Last season's price of Rs. 300-320 per quintal has now come down to Rs. 220-225 per quintal which is the normal price. The government has taken action in helping the producers to sell their cotton. Six government nominees from Coimbatore and Tirupur are in Thanjavur making the purchases and the government is purchasing 2,500 tonnes of kapas for quality seeds purposes. Another cash crop also demanding attention in the State is cashew. The cashew plantations run by the Forest department in Tiruchirapalli, South Arcot and Chingleput districts have yielded a revenue of Rs. 20 lakhs to the department. The value of the actual product was much larger, as the department leases out the plantations to cultivators, and the Rs. 20 lakh represents rents and fees only. It is now proposed to constitute a Cashew Development Corporation in the State in order to spread and intensify cashew cultivation, adopt available technologies in its production and develop a package of practices that can be used by all growers-private and the department lease holders. The sugar policy clarification, as referred to in the last issue of the Bulletin needed by the Country, by the mills and cane growers, by the northern sugar producers and those in south is still awaited and the production of sugar cane during the current year is affected by this uncertainty.

Coffee: The production of coffee is expanding. The revised estimate for 1971-72 is near the forecast in the last issue of the Bulletin at 69,000 tonnes. The blossom estimates for 1972-73 are 87,000 tonnes. The problem of marketing the coffee produced has now emerged. The bumper 1970-71 crop resulted in a carry over 28,000 tonnes which with the 69,000 tonnes of the 1971-72 output has meant finding a market for 97,000 tonnes.

The major outlet is the internal market, which can be expanded beyond the current per capita consumption of 0.61 kg and the total of 40,000 tonnes by vigorous promotion efforts and keeping price from rising. Here the cost of production is rising and the government has authorised a rise from Rs. 3.10 to 3.48 per point in the basic reserve price. The other outlet is exports. Under the International Coffee agreement, the 1970-71 quota of 21,803 tonnes was exported, and was 16,364 tonnes to the non-quota countries of Eastern Europe and U.S S.R. For 1971-72 against the quota of 21,975 tonnes, 15,920 tonnes have been exported plus 8,470 tonnes to non-quota countries so far. In summer during the current year a large stock of 97,000 tonnes will have to be marketed, about half being exported and the other half sold in the internal market. This means that bilateral negotiations with non-quota countries will have to be vigorously pursued. The government and Coffee Board have launched a programme of relief to the small planters, for which a case was made in the last issue of the Bulletin. The small planters will under the intensive cultivation scheme obtain double the quantum of loans per acre and the limit of the plantation has also been doubled. All eligible planters will get loans up to 70 percent of the standing crop and for the small planters 25 percent of the replanting loan will be treated as a subsidy. These relief measures will amount to a total of Rs. 2 crores. There is a special problem with the Nilgiris coffee plantations, due to land erosion and uneconomic holdings. The relief scheme should have special application to the estates in this region.

Tea: As forecast in the last two issues in the Bulletin, the returns on tea production in the State show that in 1971-72 the tea production of 25.2 million kg. was a 6 per cent decrease over that of previous year, due to frost and drought damage to some 4,000 acres of tea plantations. These factors led to a loss of 8 million kg. The annual production is around Rs. 20 crores, the export earnings from tea are Rs. 10 crores and over 50,000 workers are employed in the plantations. The plantations are exempted from ceiling but feel restricted because they are not allowed to expand into neighbouring forest lands as the forest department is developing its own tea and coffee plantations, particularly to settle the Ceylon repatriates. There is a case however for the government examining rates of its sales tax, and surcharge vis-a-vis that is prevailing in other States. This consideration applies equally to power rates where, as noted earlier, this State is operating at uneconomically low rates.

Credit: Farm credit particularly to the small farmer continues to be a problem. The cooperative societies, as pointed out in Vol. I No. 7 and Vol. II No. 6 of the Bulletin, constitute an important source. For 1971-72 the cooperatives made available Rs. 57 crores as loans to agriculturalists, registering the first increase of Rs. 12 crores after three years when the annual disbursal was stabilised at Rs. 45 crores. Their recovery rates have improved from 16 to 12 percent, with the Kumbakonam society continuing its sound management, with one percent arrearage. All 14 Central Banks in the State have thus improved their classification this year. But the problems of delay in the securing of the loans and the obligation to subscribe to the share capital when loan applications are made, together with the small part played by nationalised banks in providing farm credit, make the money lender still the major source of loans for the small farmer. The nationalised banks in their turn face many problems relating to their procedure which requires security for loans, the procedure for application, the problem of end use supervision, the absence of cover for personal security loans either from the State or the Credit Guarantee Corporation and the lack of machinery to aid them in collection of loan repayments.

These are all remediable obstacles and action by the banks, by the Reserve Bank and the State Government can help this important source of credit function effectively. The banks could be placed by the government on a par with cooperative societies for collection of debts and the government and local bodies should use the local branch as their banking agent. The available credit resources need to be disbursed speedily to the farmers. The Rs. 6 crore Agricultural Refinance Corporation/International Development Association credit for helping farmers sink new wells, deepen existing wells, construct shallow and medium tube wells with pump sets is being operated at too slow a pace. So far the land development banks have disbursed only 30 lakhs and they have less than 6 months in which to disburse the remaining Rs. 570 lakhs. This might involve some hasty and unplanned actions and decisions. In the State the land development banks have come to occupy an important place of farm credit. In 1971-72 they disbursed Rs. 25 crores as loans to the agriculturalists. There is also a further uncertainty. The drought conditions in parts of the State and the farmers' agitation have led to postponement in the collection of arrears in these areas. This necessary action in drought affected blocks should not however be used as an excuse to worsen the small progress made in disbursal of loans and in the rate of collection of arrears.

Dairy and Fish Farming: Further to the developments in dairy farming in the State, outlined in the last issue of the Bulletin, the Tamil Nadu Dairy Development Corporation has been set up as from July to take over the processing and distribution of milk in the city. It is also responsible for dairy development in Chingleput, North Arcot, South Arcot and Coimbatore districts. It promotes milk production and distribution in the State, including the milk factory at Madhavaram. The Madhavaram dairy farm itself will continue to be managed by the State Dairy Department. The farm cattle has been strengthened in the past with the import of Australian Jersey cattle which needed special care. Now the Australian Milking Zebu which is a genetic blend between the Pakistani Sahiwal and the English Jersey is being used. It is adapted to our climate and its milk production is stable and large and can meet more effectively the growing milk demand in the city and the districts.

With the help of the trawlers referred to in the last issue of the Bulletin, the government is undertaking deep sea fishing surveys of the fish pockets all along the coast of the State. It is also planning to process and export the fish that will be netted in these deep sea fishing expeditions. For this the Madras and Tuticorin harbours are being developed as major fishing ports with all the necessary facilities. The Perspective Plan provides for a large investment for the development of fishery resources of the State.

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Industrial Development

SIDCO and Industrial Estates: The Small Industries Corporation Ltd. (SIDCO) is further developing a net work of industrial estates in the State. The earliest one was the Gunidy Industrial Estate started in 1958. It houses 140 units of eight different sizes, varying from 1,200 sq. ft. to 14,290 sq. ft. and is today part of the growing industrial complex covering Adyar, Guindy, Meenambakkam, Pallavaram, and Nandambakkam which are the seat of a number of large, medium and small scale industries run by the

Central, State and private sectors. SIDCO's first estate in the net work was opened in early June at Ambattur with 17 sheds built at a low cost of Rs. 18 per sq feet and SIDCO supplied machinery on a hire purchase system, costing Rs. 101 lakhs for 210 technicians. The other estates coming up are the PVC oriented industrial estate at Sahupuram and Tuticorin, a textile industrial estate in Coimbatore, and a functional industrial estate in Tiruvarur in Thanjavur. SIDCO is planning in this manner to provide facilities for the small scale entrepreneur and to maintain a technical consultancy cell that will help young engineers and technicians to draw up projects reports. This would also aim at locating small scale industries in backward districts. In this connection the Union government to allocate a foreign exchange quota to the Tamil Nadu Industrial Investment Corporation will help the development of small industries and the small entrepreneurs. Till now even their small foreign exchange needs involved endless negotiations with ICICI; or IDBI, or IFC. The development of small industries, the effective operation of the technicians scheme and the opening of the backward areas to industries, however, require a number of related facilities. The technocrat scheme has not really got off the ground. The scheme which provides 100 percent advances upto Rs. 1 lakh and 90 percent upto Rs. 2 lakhs has not attracted many unemployed engineers and technicians partly because it is not well publicised and explained and partly because of other problems, some of which will be met by SIDCO. The consultancy service will provide the technicians with help in establishing the needed project description. A second problem is the absence of water, roads and railways, power and other infrastructural facilities in the backward areas. Here too SIDCO's programme of many types of industrial estates will be a means of creating the infrastructural facilities so badly needed in these neglected areas. The Sivakasi fire works industry, for instance, faces closing down and making its 20,000 workers unemployed because of the poor communications facilities and non-availability of wagons. The raw material shortage is general and both the Union and State governments need to help the small industrialists to obtain his raw materials. The problem of finding the foreign exchange that he needs is now being solved. But there is one essential for the development of the small industrialist and the technocrat. It is no accident that so many industrial estates and small industries are clustered around the large and medium industries in Madras, Tiruchi and Coimbatore. The opening up of the backward districts in the State depends on large and medium industries in the public and private sector being located in these areas. Only then can SIDCO succeed in its aim of promoting small industries location in the backward areas, for then the small industries will be ancillaries and will have a steady flow of orders and a ready market for their products. The government is examining the small car project for which a letter of interest has been issued as reported in the Vol. II No. 3 of the Bulletin. A technical committee of the Tamil Nadu Industrial Development Corporation is, under instruction from the government, elaborating the project which should be established in the State. Standard cars production in the State has stabilized itself at a low level. This project will involve a Rs. 1.5 lakh proto-type development and the full project Rs. 20 crores in order to produce 25,000 vehicles annually.

Handlooms: The State government is now acting to promote handloom exports which form an important part of the State's export contribution as seen in Vol. II No. 6 of the Bulletin. It is providing a subsidy of 2 percent on the F. O. B. value of handloom fabrics exported. The 11 million square yards of yarn handloom quota for the U.S. has all been taken up by our exporters and the consignments of made up goods for the U. S.

market which are on tap will be eligible for the rebate. This is an important development for the handloom industry of the State and its export servicing.

Ore, Petro-chemicals and PVC : Kavunthimalai in the Tiruvannamalai region is another likely source of iron ore for the State. Final tests are being conducted to determine the nature and quality of the ore and drilling operations are going ahead in the area. Japan is interested in this source of iron ore supply and a Japanese team has visited the site and is conducting negotiations on its use. The trends in petro-chemicals feedstocks consumption indicate that our current 4 lakh Naptha deficit would double by the second year of the Fifth Plan, when all refineries including the new ones at Tuticorin, Halda, Mathura and Bangaigon are in full operation. With the rising world demand, its price rise might also make it an unviable feedstock. Hence the possibility of gas oil cracking for our middle distillates and petro-chemicals need to be developed. Further as a means of integrating fuel and chemical production from petroleum, raw liquified natural gas should be imported and used for energy methanuol or ammonia production. This will also require further oil exploration and conservation of coal for energy and chemicals. The damage to the Manali refinery from the kerosene tank fire at the end of July has caused a loss of 1,500 tonnes of oil and about Rs. 4 lakhs worth of damage. The fire protection epuipment and services in this type of large infrastructural investment needs to be updated to prevent unavoidable losses like this. Further the refinery has 5,000 tonnes of cooking gas (LPG) going waste at present levels of consumption in the State and Southern region. At the same time gas supplies are inadequate and irregular to the city's customers. IOC has frozen the booking of new customers in Madras and in 43 other towns for several reasons. This is untenable, because while the Manali refinery can supply 25,000 tonnes of working gas per month, IOC's offtake is only 15,000 for the 20,000 consumers in Madras city and 45,000 in 40 towns of Andhra Pradesh, Kerala. Mysore and Tamil Nadu. This contradictory position should be corrected. First the cylinders supply should be increased to at least 5,000 new cylinders per month to service the new customers. Here the steel shortage is affecting the cylinders production programme at Allwyn in Hyderabad. The Union government has made it clear that it does not intend to increase the steel allocation to trade circles as the open market price for steel is much higher than the price allowed by the Joint Plant Committee. It has also reaffirmed the price equalisation policy for steel so that consumers everywhere may be treated equitably. What is needed is for steel supply to be increased to the Hyderabad unit so that the present cylinders shortage may be ended. The distribution problems should also be remedied. The empty cylinders should be speedily collected by IOC, their recharge speeded up and the vehicles for distribution increased. The distributors should maintain at least a week's stock and the number of distributors particularly from the ranks of the educated unemployed increased. The Rs. 11 crores PVC plant of Plastic Resins and Chemicals Ltd., at Sahupuram went into production at the end of July after a delay of 9 months. The project whose process control is computerised and which has an industrial television system will be meeting the growing demand for PVC resins, producing in the first stage annually 7,000 tonnes valued at Rs. 2.25 crores, rising next year to its full capacity of 14,000 tonnes with a value of Rs. 5.5 crores.

Hides and Skins : Hides and skins exports face short and long terms problem in the State. The short term problem arises from the floating of the pound which resulted in a decline in exports in July. In some lines such as medium and heavy weights, kips and

the calf section, the demand has slowed down and there was a general trend not to import into the United Kingdom till normal exchange business could be transacted. The long term problems are related to the decision of the government to promote the export of finished leather goods and cut back on exports of hides and skins. On the principle involved, namely to promote vertical integration from the raw hides and skins stage to the finished leather and-leather manufactures production stage there is identity of interests and views on the part of the government and the leather industry. The problems in translating the principle into an action programme relate to the methods and timing The methods that must be to developed promote finished leather exports and those relating to making available to the industry a package of incentives. The infrastructure for an export oriented leather industry calls for an investment of Rs. 38 crores with Rs. 9 crores in foreign exchange. There will also be needed export subsidies and cost incentives for a period of five years to the exporters and a programme to train managers and survey the internal and external market demand. The industry will have to be modernised and mechanised. The licensing procedures should be simplified, the import of machinery and chemicals against export replenishment licenses and the three percent license against EI tanned leather should be facilitated. The other problem is the timing of this switch over. In 1970-71 there was a fall in chrome leather exports by Rs. 8 crores and pick up of only Rs. 4.2 crores of finished leather and leather manufactures exports. There is a certain rhythm for this switch over. 15 tanners in this State have so far made the switch over. Thus the leather manufacturing units do not have the capacity to absorb all hides and skins in the country, if the export of the leather was completely banned. Further there will always be a certain amount of finishing work to be done in the receiving country in a trade where fashion changes 4 times a year. The U.S. and European importers must handle a certain amount of unfinished leather to meet the changing colour and design fashions. In any case what is needed is a careful study of the markets in U.S., U.K. and Europe in order to decide on the optimum exports of finished leather good and finished leather. The State and the Country have an important opportunity to expand their leather exports on the basis of the sound traditions built todate and the understanding support of the government.

Sugar: The current year's sugar production is estimated at varying amounts of 3.15 lakh tonnes and 2.9 lakh tonnes last year's production being 3.1 lakh tonnes. The industry in the State faces a series of problems. Before the imposition of the controls referred to in the last issue of the Bulletin, the State mills had agreed after discussion with the government to pay Rs. 85 for cane against the floor priceof Rs. 73-77 fixed by the Union government. (See Vol. II No. 2 of the Bulletin). Withthe controls, they will be paying more to the growers and realising less for their sugar. As a result four mills – Nellikuppum, Vadapathimangalam, Mundiambakkam and Pondicherry have stated that they cannot pay the higher prices. A second problem is that the difference between the South India Sugar Mills Association (SISMA) and the Indian Sugar Mills Association (ISMA) have reached a breaking point. SIMSA favours a minimum price of Rs. 8 per quintal linked to a base recovery of 8 5 percent, ISMA wants a price of Rs. 9 linked to a base recovery of 9 percent. In part this is due to the Southern mills dealing directly with cane growers and therefore influencing the volume and quality of the cane, while the northern mills have to deal with intermediary cooperatives. The basic difference is that SISMA wants a single uniform policy for the country while there are sections of ISMA who want one for the North and the South. The regrettable

effect of all this is that SISMA will be setting up its own liaison office in Delhi to deal with the government. Finally the overall policy on sugar prices has yet to be established by the government. The negative elements of that policy are clear. There will be no increase in the levy price of sugar as demanded by ISMA. There will be no import of sugar. The policy when it is decided should be a long term one—for 5 years and should deal with qualitative and quantitative problems. Meanwhile the sugar industry itself is considering a formula to link sugar cane prices with the realisations on the sale of sugar, the surplus realisation being shared between the cane grower and the mill in the ratio of 60:40. In the State, the government is obtaining its supplies at Rs. 137 against Rs. 150 before control. Hence there has been a reduction in sugar prices to the consumer to Rs 1.85 per kg. The government must also review its agreement on cane prices in light of recent events. There is a wide disparity in sugar prices, Rs. 380 per quintal in New Delhi, Rs. 355 in Bombay, Rs. 330 in Madras. In Uttar Pradesh free sugar is being sold at Rs 290, at Bombay Rs. 315, and in Tamil Nadu at Rs. 265 per quintal 1972—73 should be a production of 40 lakh tonnes. At present it looks as if only sugar mills in Tamil Nadu, Andhra Pradesh and Mysore are in a position to improve on their performance over the last season and achieve an output of 9.58 lakh tonnes in 1972–73 against 8.5 lakh tonnes in 1971—72.

Private Sector—Annual Reports: The annual reports of the four private sector companies reviewed in this issue show the usual pluses and minuses, with more on the pluses side. Seshasayee reports a poor year in its insulator production with a sales of Rs 1.58 crores, with Rs. 24 lakhs of electricity porcelain which began to be produced only in the second half of the year. The main problem faced by the unit was the fluctuating nature of the demand for insulation by State Electricity Boards. The Boards themselves face an imponderable situation with power shortages, due to low hydel water levels and fuel shortage in thermal stations. Even so there should be a minimum flow of regular orders and this should be ensured for the future. Another problem is the danger of planning for a capacity in this line of production that is above the foreseen demand. For the Fourth Plan, the CWPC computed that the annual demand for conventional insulators will be 15,000 tonnes but the capacity of the six units exceeds 18,000 tonnes. The fifth Plan demand will be known and the capacity should be equated with it. The other problems faced by the unit are rising raw materials cost, fixed product prices, rising wages and disturbed labour conditions. The report however ends with a good record for the first five months of the current year when production was Rs. 99 lakhs and sales at 92 lakhs. India Cements reports increased production last year, the Sankarnagar unit increasing clinker output from 7.50 lakh tonnes to 7.79 lakh tonnes. The third kiln at Sankardrug performed even better at 102 percent of its rated capacity. However the wagon shortage referred to earlier and in the last issue of the Bulletin reduced cement dispatches and so increased the value stocks held by the factory. The year also witnessed some further increase in costs due to new levies, higher interest charges and adequate provision against depreciation, so that the dividend was about half of that of the previous dividend. The annual report of the Metal Box Company records a sales increase of 7.6 percent to Rs. 36-4 crores and excluding the three price increase of 3 5 percent, which is good in light of the stoppage of tin plate production following Rourkela's accident and the interruption of tin plate imports during the Indo-Pakistan war. In any case there was little need for apologies for declaring a dividend of 9 percent. The report highlights the fact that despite the monthly rated employee arrangements in

the Madras factory, the workers continued to restrict production during the second half of the year as part of the poor industrial relations in the city. The problems faced by the tinplate packaging industries are traced to their being placed in the non-priority sector and there is need to review this in relation to their use in paints, dry cells, pesticides, vanaspati etc., which are in the essential goods category. Further the need to increase the production of light substance metal and nitrogenous steel by Hindustan Steel is also rightly emphasised. The report of the Mettur Chemicals and Industrial Corporation shows a 5 percent increase in turn over due mainly to the improved utilisation of the chloromethane plant. Depreciation of Rs. 60.75 lakhs were provided and Rs. 45-50 lakhs for the depreciation rebate. The production of caustic soda was maintained despite the withdrawal of U. S. supplies which were compensated by imports allowed by the government at a higher cost. Salt transport to Melur from the Adirampatnam and Vedaranyam units was made difficult due to wagon shortages. Vanaspati production faced the problem of the short supply in its mix of 10 percent cotton seed oil, 7.5 percent sesame oil and 2.5 percent kardi oil, when the first two were in very short supply. The unit is adjusting to these many problems including the general cost squeeze by inflation due to sound and intelligent management.

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Education, Science and Health :

Perspective Plan for Education, Science and Technology : The Perspective Plan for Education, Science and Technology was presented to the Chairman of the State Planning Commission on 3rd August, 1972. The model proposed in the Plan is summarised in Chapter II as follows :

An Education Model for Tamil Nadu : The 12 year Perspective Plan in Education, Science and Technology, which is based on an appraisal of the system in retrospect, will conform to the following objectives, principles, stages, structure and programmes.

Objectives : The present objectives of Tamil Nadu Education, Science and Technology—the development of the personality of the child; the understanding of the culture and history of the State, the Country and the world; the instruction in the normal and spiritual values of the country; the acquisition of scientific, technical and professional skills; the promotion of research to push back the frontiers of knowledge and solve the technical and developmental problems faced by the State; the democratisation of education through meeting the growing demand for education and providing social compensation for the condition of the poor majority of the State's population—all these will be continued. In addition, the major new objective of the system during the next twelve years will be to relate directly the right to education with the right to employment in the State and the Country and to relate the various stages of the education and training system to the graded skill demands of society.

Principles : The principles on which the educational model for the future is based are those of continuity and renovation, of sanctity of contracts, (so that no one now employed will be discharged from service because of any proposed restructurisation or reform) and of gradualism so that the necessary transitional period is allowed for in the innovations proposed. To this end, the system will provide complete education, free to

all in the age group 5-14; make the minimum skills imparted through the equivalent of four years of schooling available to all the people of Tamil Nadu; increase the enrolment of girls and reduce wastage among them; raise the quality of education and science at all levels; disaggregate the education and science system so that it corresponds to the skill demads of society and allows students multiple entry, exit and re-entry points to come into, leave the school system for employment purposes or re-enter it without being pejoratively described as drop-outs; co-ordinate with a view ultimately to merging in a single system of the in-school and out-of-school education and training; provide compensatory educational facilities for the disadvantaged sections of society; make education and science functional and relevant to Tamil Nadu and the India of to-day and to-morrow; redeploy the educational expentitures in the State from all sources, State and Central Governments, the University Grants Commission, parents and private sector – so that they are not wastefully consumed in linear expansion but become productive of educational excellence and of a purposive and efficient employment orientation.

Stages, Structures and Programmes: The problem with the present structure is that it is too long and not long enough, It requires 11 years of schooling and six years of college education with each year consisting of 220 working days for primary, 200 working days for secondary and 180 working days for college education and each day consisting of five working hours for all of them. A second problem is that the present aggregation of the structure into three stages 1 to 5, 6 to 8 and 9 to 11 at school level and 1 + 2 + 2 at the college level does not conform to the needs of students or to the skills demanded by the society and leads to what has been termed as massive drop-outs.

It is therefore proposed: That the school course be made of ten years' duration as in the other States of the Union ensuring uniformity in curriculum and quality of education even while aiming at higher standards; that the instruction time, the number of hours and days be extended for this purpose as appropriate. The 10-year schooling provided free to all in the State will be disaggregated into four or five stages to enable students smoothly and naturally to leave school at various points for employment or work at home and re-enter school;

That out-of-school education be provided to all who leave school before standard IV and to the 143 lakh adult illiterates in the State as the equivalent of five years' primary schooling;

That the enrolment of girls be increased to equal that of boys, that the rate of wastage in their school performance be reduced through (i) functionalisation of their school curricula; (ii) a programme aimed at changing social traditions acting as a constraint on women's education; (iii) the provision of additional quarters for women teachers in rural areas, and (iv) the free distribution of clothes to girl students;

That a gradual merging of school and out-of-school education be encompassed through the use of common curricula, teachers and iustructors, buildings, equipment, libraries, laboratories and farms and other agencies which will also provide continuing education both general instruction and vocational education to those who need it and wish for it, through correspondence courses, evening classes, the radio and television. These programmes in both general and vocational education and training will be certified by educational diplomas;

That curricula, teaching methods and learning techniques be reformed so that they become functional to varying learning abilities, teaching technologies and to urban and rural contexts and to the economic, societal and cultural realities of Tamil Nadu. Science education at all stages will be upgraded and modernised;

That secondary education be vocationalised and be made employment-oriented through a rapidly increased network of technical high schools, comprehensive schools and through the introduction of "streaming" from Standard VIII into various educational and vocational specialisations and through the continual entry or exit of students into and from the school, the farm, factory and office;

That standard X become the terminating point of school education for a majority of students, (as at present) who will then be able to improve and continue their skills through out-of-school, out-of-college education and training programmes;

That internal assessments be used through the school years including standard X, at which stage either a public examination of the students' general learning capacity be organised or schools be given responsibility for such examination, under criteria and guidance to be established by the Board of Secondary Education;

The admission to higher education be on the basis of fitness and aptitude tests conducted by each institution under the guidance of a central authority referred to later;

That higher education be organised on a 2+2 or 3 structure—with two years for the intermediate course, two years for the degree, two years for post-graduate studies or three years' degree with honours. Each stage will correspond to an ascending order of skills, for which the preparatory language learning will be completed in the intermediate course, the degree and post-graduate courses being subject-centred or professional. The professional degrees in medicine, agriculture, engineering etc., will continue their present time-period;

That all undergraduate education in the State be entrusted to a statutorily constituted autonomous State Council of Academic Awards with two or three affiliating regional academic bodies or to two or three new affiliating Universities. This Council or these Universities for Under-graduate Education will put into effect a system of autonomous colleges, the semester system and internal assessment procedures.

That the Universities of Madras, Annamalai and Madurai be developed into centres of excellence in post-graduate teaching and research.

That a Technological University for diploma, graduate and post-graduate engineering education be started and the Tamil Nadu Agricultural University be developed as a multi-faculty institution covering the animal sciences, agricultural engineering, home science, forestry, fisheries, basic sciences and humanities in addition to its existing departments in the agricultural sciences.

That scientific and developmental research be promoted through the starting of a

1. Tamil Nadu Science Foundation;
2. Tamil Nadu Accademy of Basic and Applied Sciences;
3. Hall of Science and Industry;

4. Information, Storage and Retrieval Centre;
5. Computer Centres;
6. *Centre for Ocean Engineering and Marine Science;*
7. Institute of Management Training and Development;
8. Material-Testing Bureau;
9. Centre for Automotive Engineering and Development;
10. Centre for Environmental Engineering;
11. Centre for Water Resources Planning and Development; and
12. Centre for Urban Engineering;

That an educational planning machinery be established, the State management be modernised, and administration decentralised with appropriate training programmes, selection and promotion procedures and a smoothly functioning grant-in-aid administration.

Finance : Educational finance in the State presents two problems which must be resolved in the Perspective Plan. First, its rate of growth has been continuously increasing for both the State and the parents, fast reaching the ceiling level. Secondly, its present distribution and use or misuse between various levels and forms of education have involved an element of dysfunctional disinvestment.

It is proposed that State finances for education be redeployed to provide :

Free out-of-school education, so that the 51.2 per cent of wasters from primary school and the 60 per cent illiterate adults obtain the minimum schooling;

Improved science and craft education at school ; and

The scientific and developmental research programmes and post-graduate education and research at the Universities.

It is further proposed that higher education be gradually returned to a system based on fees alongside of an extensive scholarship scheme based on merit and/or poverty as decided by a means test.

The Perspective Plan proposes a programme of Rs. 172 crores for the Fifth Plan and Rs. 182 crores for the Sixth Plan.

Education Reform Movement : The State Education Minister has once more called attention to the falling standards in higher education and the urgent need to examine reform proposals both at the school and university level. One reform that he proposes is to spend less time on learning languages and to reorient the teaching of history and social studies which he characterises as pure waste at present. In the neighbouring State of Andhra Pradesh in the State assembly members have called attention to the pernicious information contained in many of our school textbooks, for instance the mathematics book making students calculate the gains from adulterating alcohol with water, borrowing from banks and lending the resources at higher interest rates etc. The Thanjavur youth corps selection board reports the low standards of the graduates who appeared before the Board. Some of the graduates had not heard of the Simla accord, did not know the

location of Simla, the names of the State or Central ministers etc. One of the reforms proposed by the Tamil Nadu Minister of education, for which he has been rather violently criticised by those who do not or will not understand his proposal and its motivation, is for a two tier SSLC exam – one tier which would be for the majority 80 per cent who terminate at the SSLC and another for those who have the wish and aptitude for higher education as at present. This would be a means of making school education purposeful and skill forming and of higher education producing highly skilled manpower through quality education and research. Many headmasters support such a two tier system both to enable the majority of students to enter the employment market and to improve the quality school and higher education. Such a system would involve a reform in the examinations at all levels particularly for those who are entering higher education in the direction of internal assessments of all the attainments and aptitudes of the student. The bankruptcy of the present examination systems is once more revealed by the news item from Jabalpur that the SSLC examinations results were published, while a batch of answer papers were pawned by an examiner and remained unmarked in the hands of the pawn broker.

This gives point to the further proposal of the State Education Minister to improve the quality of teaching. He proposes that in order to ensure that only those who have an aptitude for teaching should enter the teaching profession. For this each person wishing to become a teacher should first teach in a school for a year and only on the basis of performance there should he or she be selected for teacher training. The State also faces a serious problem of school buildings. There are 10,000 primary schools run by panchayat unions housed in sheds and other makeshift accommodation, for which Rs. 8 crores are needed for provision of adequate buildings. Similarly Rs. 30 crores are needed for buildings and laboratories for the high schools. For this programme the Perspective Plan proposes a research and development cell in the Directorate of school and out-of-school education which can on the basis of the experience of the Asian school building research centre in Colombo, design and direct economical school building construction. The government is planning the setting up of a school building Board to raise loans from LIC and the nationalised banks for this programme. The reform of higher education proposed in the State's Perspective Plan is very similar to that under discussion in West Bengal. There the Education Minister proposes an educational structure of 10 plus 2 plus 3 and wishes that this become the common structure for all States in India. The University and the colleges however propose a 10+2+2 structure. Also the University examination reforms committee proposes that the question paper setter should also provide model answers, that there should be internal assessments in every college and a student should obtain 34 per cent in it and the university examination, that the question papers should be a mixture of objective, subjective and essay questions, that the student should be asked to answer 5 pairs of questions instead of 5 out of 10 questions and that students should be able to take their examinations by subjects and retain their marks in a subject. The general direction of these reforms are set forth for Tamil Nadu in its Education Perspective Plan.

Technical Education : One of the recommendations of the State Perspective Plan is that industry should contribute to skill based education. With the cooperation of Madras Refineries, a petro-chemical technicians course is to be organised in the Central Polytechnic. Six specialised training programmes are being organised in Ennore with the help of the Kothari Foundation. All technician and engineering courses should be

similarly tied in with the State's industries in order to meet the needs of industries and remove the spectre of engineering unemployment. In agricultural education, the recommendation is to expand and strengthen the Tamil Nadu Agricultural University as proposed in the Perspective Plan, increasing its specialisations and strengthening its research and extension programmes. Any move to open an additional agricultural college as proposed by the Pudukottai authorities will lower standards and raise employment problems.

Science: Parallel to the Perspective Plan for Science and Technology set forth for Tamil Nadu, the National Committee on Science and Technology is finalising its Plan to fit into the Fifth Plan. It recommends 21 action programmes, each related to the specific goals of the Fifth Plan In fuel, it recommends shifting from oil which we are importing at an annual cost of Rs. 160 crores to coal, by setting up coal gasification plants in the Nagpur coal belt and transforming our low grade coal into briquettes. In steel, it proposes trying a new form of R & D by forming a team of metallurgists and chemists to play around one blast furnace at Durgapur and innovate and experiment in the production process. In Heavy Engineering, some 50 machines crucial for the Fifth Plan have been identified and Hindustan Machine Tools and other units are asked to develop them. In power, it is proposed to increase the supply and break the bottlenecks by replacing administrative staff in power projects by trained engineers with managerial ability. Other areas in the Plan include housing, nutrition, rural health, communication and education. Currently Rs 130 crores are being spent every year on R & D and in our vast country, there is a serious problem of overlapping, duplication and sheer ignorance of what each of the 300 research laboratories and institutions are doing in the country, as well as waste and lack of direct relationship to the plan goals. This is a problem both of planning and implementation. Another area under study by a committee headed by the Director General of CSIR is the role of the private sector in the R & D of the country. The governments computation is that about 10 per cent of the total R & D expenditures are contributed by the private sector. This is an over valued and optimistic figure. The private sector studies show that some where around 0·02 of GNP is being spent by the private sector studies on R & D. One result of the committee's work is a series of negotiated agreements with different industries to sponsor or undertake R & D. The chemical industry will collaborate with CSIR in R & D in catalysts, polymers and corrosion. Similar arrangements are being made in paper, engineering, textiles, agro-based industries, agricultural implements, petro-chemicals, complexes etc. To help this, the CSIR is setting up a data bank for technology and patents both here and from abroad and will offer to industries technological choices and economic and financial options in various fields. With the information from the data bank, rational decisions can be made on importing technology, on approving or disapproving collaboration agreements and on arranging for making available alternative technology. It is against this prospect that the government's plan for making R & D compulsory in the private sector, by making a certain percentage of R & D expenditure a part of the licenses makes sense. Parallelly the industries which are thus going in for R & D should be assured that they can use the results for expanding their capacity and output, without facing restrictons from the MRPT Act. The resulting private sector break-throughs will of course be available to other units on payment of the usual fee. The Fifth Plan prospects for R & D under these conditions are impressive. It is proposed to increase four fold the expenditure of the Fourth Plan which were Rs. 400—500 crores to Rs. 2,000 crores. Another problem that is once more being examined is the scheme

of supernumerary posts for arresting and slowing our scientific brain drain and for bringing back our established scientists from abroad. This scheme started in 1963 has functioned in a manner to attain its double purpose. Scientists go abroad because (a) their services are not in demand at home, (b) while abroad they specialise in areas suited to the country of study with little application to India and (c) the few who have returned home have not found a congenial atmosphere as their colleagues here resent them and they do not have the facilities for their work. On the other side, few of the research establishments have set up the supernumerary posts, those that have, went through long and tiresome bureaucratic delays, and quite often the posts were used to accommodate scientists who could not fit anywhere. The problem is complex but can be solved with a clear policy and a workable scheme, at least to a limited extent. It is hoped that the committee to which the scheme has been referred will not be another committee which is wasted but one that will recommend remedial measures to make the scheme effective. One way to retain our best scientists and give them an opportunity to maintain living contacts abroad would be through bilateral arrangements for scientific visits and research. The recent India-U.A.R. work plan is one such under which 12 Indian scientists in crop production, land reclamation, water management, animal husbandry and science museums will visit the U.A R. for work. In return for senior and sixteen research scientists from U.A.R. will spend three months in India studying our research in wheat, maize, oil seeds, cotton breeding technonology, and soil survey.

Health: The Perspective Plan for Health, Family Planning, Nutrition and Sanitation was presented to the Chairman of the State Planning Commission on August 10th. The major goals are set forth in Chapter I of the report.

The Goal: The Tamil Nadu's Health Policy for the period 1972—1984 will conform to the Health objectives embodied in the constitution of the World Health Organisation and constitution of the Republic of India. The Constitution of the World Health Organisation declares: Health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity...... ..... The achievement of any State in the promotion and protection of health if of value to all and ...... unequal development in different countries in the promotion of health and control of disease, especially communicable disease, is a common danger. The directive Principles of the Indian Constitution inter alia state: The State shall, in particular, direct its policy towards securing—that the health and strength of workers, men and women, and the tender age of children are not abused and that citizens are not forced by economic necessity to enter avocations unsuited to their age of strength. The State shall, within the limits of its economic capacity and development, make effective provision for old age, sickness and disablement. The State shall make provision for securing just and humane conditions of work and for maternity relief. The State shall regard the rising of the level of nutrition and the standard of living of its people and the improvement of public health as amongst its primary duties.

Health facilities are a basic human right of every citizen and expenditures on public and individual health represent an investment in the nation's economic infrastructure. The problem of population adds a restricting dimension to public health planning. It brings into our tasks the problem of using resources otherwise available for health to restrict population and the danger of dissipating scarce resources over too wide an extent through the repetition of existing amenities.

Children and expectant-mothers are a priority for medical and nutritional care. The youth of to-day are to-morrow's work force. It is a priority at once prudent, constitutional and economic. Well-being is a healthier objective than a clinically negative condition, and remedy is better than palliative measures. So are the foundation of social health laid in the well-being of the child to be preferred to the curative manipulations designed to deal with the working adult or the aged.

In the light of the above value and given scarce resources, the first requirement is of uniformity in the rendering of certain basic health services, nutrition and sanitation to all families irrespective of their domicile (rural or urban), occupation or economic circumstance (right or poor).

The end-value of Tamil Nadu Health Policy, then, is the improvement of the health of the population, particularly the 60 per cent who are not served today, through an integrated administration of public health, nutrition and family planning at the village level, which in turn will involve:

(a) the improvement of health and medical services; and

(b) the promotion of the nutritional status of vulnerable segments of the population according to a system of priorities,

(c) a campaign for family planning,

(d) the provision of a safe and adequate water supply and satisfactory sanitary facilities in the cities and towns and appropriate immediate and practicable facilities in the rural areas.

Health Services : A small, economic and self contained multi-purpose dispensary called a mini-health centre will provide maternity and child welfare, family planning, preventive and curative health care, applied nutrition and medical relief services. Each mini-health centre will serve 10,000 persons living within the Panchayat, thus involving the establishment of 1,000 new mini-centres and the reorganization of the existing 2,700. 3,700 pharmacists will be recruited and trained exclusively from among high school graduates in the villages and will be placed in charge of dispensaries in the mini-health centres located in their villages. They will serve as extensions of the mini-health centres under the supervision of mental officers. Siddha Wings will be added to these mini-health centres in the form of small rural dispensaries. 374 poly-clinic centres, comparable in scale and hierarchial status to the block primary health centres, will be formed by converting and upgrading the existing facilites at the block level; these will serve the mini-health centres and a population of 80,000 to one lakh with added bed-strength. 86 taluk headquarters hospitals will be upgraded to polyclinic hospitals with a minimum of associated specialities. They will also have a Siddha Wing of ten beds each.

Above these two will be the District General Hospital each with a bed-strength of 400 to 650 and the entire range of specialities, together with a Siddha Wing of 20 beds and a Homeopathic Wing of 10 beds. Two of these hospitals which are not so will become teaching hospitals contributing to an aggregate State output of 1,000 graduate doctors per annum. This will be matched by an out-turn of 100 doctors per annum in indigenous and homeopathic medicine. The doctor population ratio will thus be raised to 1 : ? The number of hospital beds will likewise be raised to one bed per thousand of tion and the quantum of nurse raised to one nurse per five beds. The

midwife ratio to the population will be stepped up to one in five thousand and the pharmacist ratio of 1 in 10,000. Health Laboratory Services will be upgraded and established at the State, Regional, District General Hospital, Polyclinic Hospital and Polyclinic Centre level. The production of drugs will be expanded from the present Rs. 12 crores to Rs. 24 crores.

Medical Education : A programme of restructuring and upgrading of medical education at all levels—pre-clinical, clinical, para-clinical, dental and nursing—will involve the creation of two new district colleges, a post graduate centre in Madras, a homeopathic college and a second indigenous college of medicine. The proposal for a three year Diploma Course to meet the shortage of doctors in the rural areas, does not apply to Tamil Nadu, where the 10,000 Medical Graduates will have increased to 16,000 by 1981—82 and the ratio of 1 doctor to 3,000 of the population reached. The Tamil Nadu problem is one of the distribution of doctors over the countryside. Medical research will be developed in an intensive measure, for which more funds, equipment and facilities will be provided.

Nutrition : The nutrition programme will be directed at the vulnerable sections of the population—in particular pre-school children, pregnant and nursing women through 12,500 new "Kulanthaigal Kappagams", attaching them as pre-primary sections in appropriate primary schools. 15,300 creches in primary schools will be opened where nutrition programmes will operate. These feeding programmes will meet at least a third of the daily requirements for calories and nutriments of 26,00,000 children below six years of age, who constitute 50 percent of the target population. The school feeding programme will be continued and strengthened. Nutrition education will be imparted from the nursery through secondary school to the University level, with separate curricula for professional personnel and extension services.

Family Planning : The Family Planning Programme will reduce the present birth rate of 32 births per thousand to 25 in 1979 at a projected population of 465.79 lakhs, and to 22 in 1984 at an estimated population of 498.47 lakhs through intensification of efforts, motivation and extension education. To attain these birth rates by 1979 and by 1984 respectively 58 couples per thousand population out of a total of 175 couples per thousand will be sterilized by 1979 and 500 by 1984. IUCD-users will increase from 1.4 in 1972 to 3.0 in 1979, and to 5.0 in 1984. Conventional contraceptive-users will increase from 1.7 in 1972 to 15.0 in 1979 and to 23.0 in 1984. This is based on a combination, for every thousand of population, of 12 sterilizations, 4 IUCD's and 4 conventional contraceptives and it has been computed that this "mix" among others considered, can limit population growth in Tamil Nadu to the desired targets by 1979 and 1984. An integral part of education for family planning through school and out-of-school programmes, through the radio, films, posters, hoardings and other audio-visual mass media will aim at purveying information about specific contraceptive methods, at removing misconceptions and fears regarding the consequences of sterilization, and at explaining the health, economic and ...ical values of the small-family-norm as a means of building a happy family. Population ...ion will be incorporated in the school curriculum, and a University centre of ...studies suggested. A distinct course for undergraduates studying for the ... also been drawn up.

Integrated Administration: It is proposed that the administration of public health, family planning and nutrition be integrated in the Department of Health through a single Secretary and Director aided by three joint Directors for the three services on to the district, taluk, block and mini-health centre services.

Water Supply and Sanitation: Over 70 percent of all urban areas have already been provided with piped, protected water supply. The remaining 562 towns are accounted for by on-going schemes which should be completed by 1977. The provision in the rural areas of assured sources of drinking water as distinct from that used for irrigation and certified as potable by the State Laboratory will be provided to all citizens of Tamil Nadu by 1975. The provision of Water Supply for 4,916 villages which do not have any water supply source, for the 2,330 villages in the grip of endemic diseases, and for a total of 11,814 villages which have inadequate water supply will be completed by the end of the Fifth Plan. Further sophistication of rural water supply schemes will be undertaken during the remaining period of the Perspective Plan. Underground drainage facilities for part of the unserved urban towns numbering 732 will be provided during the Fifth Plan and for the remaining towns in the Sixth. The construction of sanitary latrine, together with a leech or a soakage pit for the community and other environmental sanitation works will also be completed in the rural areas during the 12-year period. Industries will be provided with arrangements for treatment and disposal of effluents and river waters and atmospheric air will be periodically monitored with a view to ensuring a minimal pollution control system which will progressively evolve into a perfect and sophisticated system. A water management cell under the Water Supply and Drainage Board will be established to take action on the conservation, disposal and re-use of water for drinking, irrigation and industrial uses. The Board and the Cell will be empowered to deal with water as a single scarce State-wide resource and prepare legislation for the conservation and equitable distribution of water obtained from all sources. Another Body will be formed for the prevention of pollution and contamination of the environment (the atmosphere and water courses in particular) by domestic and industrial effluents, fumes and gaseous emanations.

The Perspective Plan proposes for the Fifth Plan an expenditure of Rs. 238 crores, for the Sixth Plan Rs. 476 crores.

Peasant Doctors and 3 Year Medical Diploma: As will be seen from the Perspective Plan for Health, the proposals for developing peasant doctors, that is indigenous medical personnel with a short term course in allopathic medicine, and for a 3 year medical diploma course both suggested by the Union Planning Commission in their working paper to the National Development Council are not recommended for this State. Instead the Perspective Plan proposes intensified and expanded training for Siddha, and Homeopathic doctors for whom additional colleges are to be opened and who are to be integrated in a single health service in the State, by opening indigenous medical wings in district hospitals, polyclinic hospitals and in mini-centres. In addition allopathic medical personnel will at the post graduate level be given orientation courses in indigenous medicine. Special provisions are made to equip indigenous medical personnel with indigenous drugs and medicines in the rural areas. Pharmacists will be recruited from the village SSLC graduates and after training will be posted in their villages as extension agents of the mini health centres. As pointed out in the last issue of the Bulletin, by the middle of the Fifth Plan, the State will have 19,000 allopathic doctors to meet the norm of 1 doctor

for 3,000 persons. Special action will have to be taken by the government and the local bodies to provide the facilities in the rural areas so that the doctors can be posted there to meet the health needs of these areas.

Further Health and Family Planning Developments: As a first step to a State and National health insurance scheme, the Central Government Health (CGH) scheme is being introduced for all government employees in Madras. Under the scheme, each government servant contributes a monthly sum ranging from 50 paise to Rs. 12 depending on his salary. In return he receives free medical consultation facilities at designate clinics, free medicines, diagnostic facilities and hospitalisation arrangements. The scheme also provides domiciliary visits, pre-natal and post-natal care and maternity benefits. The clinics are now being established in Madras and the cities in the State and the scheme will go into operation by November. Further to the abortion facilities in the State outlined in the last issue of the Bulletin, 28 more medical centres with abortion facilities are being established, in addition to the existing 22. It is estimated that out of 14 lakhs of pregnant mothers every year, 1 lakh desire abortions and unless regulated medical facilities are provided, the evil of illegal abortions will continue in the State. The facilities now being provided should be developed alongside of the family life education programme, so that it reaches out to the group-the poor and the rural mothers-who badly need it. The Regional Family Planning Training Centre's study shows a heartening 50 per cent decline in infant mortality in the city between 1947 and 1969. From 196 infant deaths per 1,000 live births, it has declined to 99.8 per 1,000, the major deaths being in the neo-natal period, declining with increasing age. The medium age is 18 months, with more male babies dying than females, particularly in the month of September and December from prematurity, respiratory infection, fits, nutritional deficiency and tetanus. The results of the study are of help to the State's family planning efforts whose success depends on reducing the incidence of infant mortality. The Perspective Plan proposal for a health levy varying with the income of each person in order that a minimum of health care may be provided and the target of reducing the birth rate to 25 per thousand by the end of the Fifth Plan have been established as All India recommendations at the July Meeting of State Health Ministers. The frame and finance proposals for providing an adequate health service for all persons in the State are now established. Similar progress needs to be made on the nutrition programme.

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Employment:

Further to the results of the 1971 census relating to educated unemployment referred to in the last issue of the Bulletin, the trend in educated unemployment over the last five years 1966—1971 released by the Union government is disturbing. It shows that the increase during the period was 150 per cent and that unemployment rate of increase among graduates and post-graduates was the highest at 318 per cent. The following table brings together the figures of registered job seekers with employment exchanges.

NO. OF REGISTERED EDUCATED JOB-SEEKERS (IN THOUSANDS) AT THE END OF THE YEAR

	1966	*1967*	*1968*	*1969*	*1970*	*1971*
1. Matriculates	619	714	810	910	1,101	1,296
2. Higher secondary *intermediates* (including under-graduates)	204	252	324	401	414	606
3. Graduates and above	94	121	175	215	277	393
Total	917	1,087	1,309	1,526	1,792	2,295

The CSIR census study also throws light on the distribution of educated employment. 64 percent of the University graduates and scientific and technical personnel are employed in the public sector, 26 percent in the private sector and only 10 percent are self employed. Three fourths of the Ph. Ds. are employed in the public sector, the employment of post-graduates in schools has increased from 9 percent in 1961 to 22 percent in 1971. 35 percent of the employed are in academic institutions and only 11 percent in industry. The percentage of industrial employment has declined but the absolute numbers have increased two and a half times within a decade. Thus while the percentage of post graduate science personnel employed in industry declined from 10 percent in 1961 to 6.3 percent in 1971, their numbers went up from 4,570 to 7,950; while the percentage of engineering and technicians employed in industry declined from 45.2 percent in 1961 to 31.4 percent in 1971, their numbers increased from 25,600 to 47,000. For all scientists and engineers employment increased three times in the school sector and doubled in higher educational and industrial sectors. All these indices show that industrial employment opportunities lagged far behind the supply of qualified man power. Similar trends in the general unemployment situation in Tamil Nadu are shown in our live registers. In March and April 1972 job seekers increased by 9.2 percent and 1.6 percnt and vacancies fell by 15 and 3.4 percent. The ratio of vacancies notified to registrations increased from 1.6 to 1.7. Under the Union government's Rs. 27 crores educated employment programme, Tamil Nadu receives Rs. 2 crores to which it will add from its own resources a further Rs. 2 crores for providing employment to the unemployed, particularly for self employment of engineers and technicians. The State government has also provided special training in boat building to 50 repatriates at the ITIs in Paramakudi and Virudunagar. Also 100 repatriates are being trained in ITIs for employment in government and private institutions. At the same time in the State shortages of man power are reported in 17 occupations including doctors, pharmacists, sanitary inspectors, science BT teachers, typists, power drill operators, lab assistants, radio mechanics and plumbers.

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Ethiopia:

The long term Perspective Plan of Ethiopian education was reviewed at a five day international symposium which was a follow up of the first review reported in Vol. II No. 2 of the Bulletin. Over 200 Ethiopian specialists in planning, industry, agri-

culture, social sciences, education and finance with the help of some 20 foreign specialists and financed by the World Bank had worked for over a year in 14 task forces. The results were a draft report on Ethiopian education and the economy over a 20 year period in which three alternative educational strategies were proposed. Strategy I would be a continuation of the existing pattern of 6+2+4 with qualitative improvements. Strategy II would be 4+4+4 along with a massive out-of-school programme for drop outs and adults Strategy III would be 4+2+4 with an alternative for adults running 2+2. In addition the symposium worked through three commissions on finance, objectives and the economic relationship of education. One of the impressive developments in Ethiopia is the voluntary unanimous decision of the University (staff and students) without any government urging of legislation, to make the B.A. and B Sc. a five year programme, one year of which is spent by the student in a farm or factory where he lives on the wage paid to him. The one year service is a part of the University course, is a decision of the academic community and costs the University and the government nothing. It would be useful for a group of Indian University Vice-Chancellors and student leaders to visit Ethiopia and Tanzania to see how the University and the school system there is integrated with the community and serves it. There are many urgent lessons that we in India can learn from these foward moving African States. The symposium at the end of its five day work adopted the following resolution.

The Conference of the Education Sector Review called by His Excellency the Minister of Education of the Imperial Ethiopian Government, meeting in Addis Ababa from July 8 to 13, 1972.

Having received with appreciation and reviewed in some detail the Draft Report of the Education Sector Review :

I

Being seized of the request of the Imperial Ethiopian Government to be advised on the educational strategy for Ethiopia as set forth in the Draft Report;

Recalling the mandate of the Education Sector Review which, inter alia, is

(a) to analyse the education and training system of Ethiopia and its capability for promoting economic, social, and cultural development;

(b) To suggest, wherever necessary, ways to improve and expand the education and training system in order that it might achieve aims relevant both to the society and the overall development of the country;

Being guided by the gracious words of His Imperial Majesty Haile Selassie I in his inaugural address concerning the objective of making education available to all, the role of education in preparing a dynamic society, the need, while making recommendations, to keep in proper perspective Ethiopia's unique conditions, and the directive to submit to the Government action proposals that are both feasible and in the long-term interests of the country;

Having examined the alternative strategies for Ethiopian educational development set forth in the Draft Report and the reports of the task forces together with other possibilities of educational growth;

Applying the consideration of:

(a) equity, which involves making available basic education to all people in the country within as short a time period as possible,

(b) quality, which involves reorienting of education in Ethiopia so as to foster the flowering of the personality of the individual child and adult, and to maintain high standards of excellence,

(c) development, which involves the structuring of Ethiopian education so as to be a motor force in and integral part of national Ethiopian development and international understanding and peace;

Commends the three valid and viable alternative strategies for Ethiopian educational development as set forth in the Draft Report in light of the comments made on them;

Expresses its preference for strategy number II together with the proposal for basic and secondary education formation set forth in Strategy number III;

Recommends that the preferred strategy be further refined and elaborated by:

(a) making the entry age into minimum formation education and basic formation education and the number of class units and school years flexible so as to respond to local particularities and conditions and the individual aptitudes and abilities of the child, youth and adult,

(b) improving the teacher mix at the first level of in-school and out-of-school education and updating and increasing teacher qualifications and qualities through institutional and in-service training of teachers and community assistants, ensuring the use of Ethiopian educational technologies as part of learning process,

(c) reforming the existing examination system and the system of rewards attached to examination results,

(d) elaborating upon, with the help of other Ethiopian development agencies, the programme of community practicums and development centres, to which all further additional resources that may become available should be allocated,

(e) developing further a simplified, rational and decentralised planning, administrative and delivery structure,

(f) establishing mechanisms which would mandate, after a period of five years, a review of the limits placed on growth of second and third level education,

(g) evaluating of any prior experiments aimed at making education more functional and community oriented, with a view to incorporating the results in the formulation of projects that will flow from the strategy,

(h) arranging for a wide ranging national discussion of the educational strategy and reform proposals in which the community at all levels, including parents and teachers, will be involved,

(i) arranging for an examination of the national salary structure including the salary system of the educational sector;

Looks forward to Haile Selassie I University and other higher educational institutions in the country being the inspiring fountainhead for the application of the strategy and the educational regeneration of the country, in which they will themselves be involved;

Affirms its faith in the crucial economic assumptions on which the educational development strategy is based, namely:

(a) that the critical area of Ethiopian development is its agriculture-rural sector where productive and massive employment-generating programmes need to be launched,

(b) that the new rapidly growing industrial, commercial and service sectors will further grow and also make its contribution to employment-generation, particularly for the increasing number of skilled personnel emerging from the second and third levels of education;

Considers that this integration of education with national development as massive effort in skill building and formation in Ethiopia is an important and urgently needed invocation that will also be of keen interest to all developing countries throughout the Third World.

II

Having received, reviewed and approved the reports of its three commissions on :

objectives, curriculums and teacher training,
management and finance, and
manpower and eductional development;

Urges that its conclusions and recommendations relating to chapters 3 through 7 and appendices II-A-1, IV-A-1 and V-A of the Draft Report be taken into account in preparing the Final Report of the Education Sector Review;

Endorses the Draft Report in light of its recommendations and comments above

III

Expresses its grateful thanks to His Excellency the Minister of Education for the privilege and opportunity given to the members to participate in this historic exercise; and

Pledges the continued support and cooperation of the members in the execution of the education development programme that will be decided and launched by the Imperial Ethiopian Govenment.

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International Social Science Collaboration :

The committee on International Collaboration programme of the Indian Council for Social Science Research, meeting in August has proposed a long term programme for inviting social scientists from other countries to visit and work with social scientists in India. Such programmes exist on a large and growing scale with the social scientists of the United States and the United Kingdom. The Council has collected and indexed the names of 287 scholars from 50 countries and suggested by its disciplinary standing committees. There are two sources for this programme. First through the 16 bilateral cultural agreements social

scientists visits can be arranged. It was decided that all future cultural agreements should provide for such collaboration. The Council itself has a small sum of Rs. 2-3 lakhs per annum for financing such visits. For this year, Prof. Moser of U. K., Mr. Ilitch of Mexico, Mr. Prado of Santiago, Mr. Chaudhury of Nepal and Mr. Rodriguez of Brazil will be visiting the country. Visits from African and South East Asian Social scientists will also be arranged as a priority. In general the visitors will be working scientists who will spend 6 to 8 weeks working in one or two centres in the country.

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Academic Meetings: The Administrative Staff College, Hyderabad which runs training programmes for college administrators organised its fourth annual programmes for principals and heads of departments of the colleges in the Telengana region. The course enabled its participants to update their skills in educational planning, modernised management including use of the system approach and PERT net works and discuss and agree upon problems of staff-student relations, guidance systems and commnity service. Lady Willingdon Training College inaugurated its college Uuion which for the first time did not have the first year intake of secondary grade teachers. The 200 members of the Union for this year comprise the B. T. students, the 2nd year of the secondary grade teachers and the 6 month course Tamil Pandit participants. The Union devoted its opening meeting to a consideration of the tasks incumbent on the teacher today in Tamil Nadu. Another school event was the candle light ceremony at Vidyodaya—a pioneering educational institution started in the twenties and which has expanded to over 1000 students from the pre-primary to the SSLC/ISC stages. It is the institution which has shown that quantitative expansion and qualitative excellence can go hand in hand, largely due to the wise and effective management of the institution and its keeping itself upto date in curricula, syllabus and teaching methods. Above all it breathes an air of education.

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Seminar on Techniques of Perspective Planning :

The revised programme for the Seminar on September 15 and 16 in Rajaji Hall, Madras organised by Madras Institute of Development Studies and the Institute for the State Planning Commission is as follows :

President : Thiru P. Sabanayagam, I.A.S., Chief Secretary to the Government of Tamil Nadu.

Vice-President : Thiru M. G. Raja Ram, I. A. S., Deputy Chairman, State Planning Commission

September 15, 1972.

(10.00 a.m. to 1.00 p.m.)

Perspective Planning in Tamil Nadu	Inauguration by Chief Minister Dr. M. Karunanidhi	
Draft Perspective Plan-frame	Dr. B. Natarajan	
(2.20 p.m. to 5.00 p.m.)		
Sectoral Programming	Thiru N. Mahalingam	2.30 p.m.
	Dr. D. Bright Singh	3.00 p.m. and
	Dr. A. Vaidyanathan	3.30 p.m.

District Planning	Thiru K. A. Nambiar	4.00 p.m.
	Thiru Shivakumar	4.30 p.m.

September 16, 1972
(10.00 a.m. to 1.00 p.m.)

Industrial complex studies	Dr. V. Shanmugasundaram	10.00 a.m.
Area Studies	Thiru Eric P. W. da Costa	10.30 a.m.
Regional Planning	Thiru E. C. Prabhakar	11.00 a.m.
Resources and constraints	Prof. T. S. Venkataswamy	12.30 p.m.

(2.30 p.m. to 5.00 p.m.)

Participation of Universities in Perspective Planning	Dr. A. Ramaswami Annamalai University	2.30 p.m.
Participation of Local Bodies in Perspective Planning	Thiru V. Krishnamurthy, MLA	2.45 p.m.
Participation of Private Sector in Perspective Planning	Thiru T. S. Krishnan	3.00 p.m.
Final Resolution	Dr. Malcolm S. Adiseshiah	3.30 p.m.
Valedictory Address	Thiru D. P. Dhar	
Perspective Planning and Five-Year Planning	Union Minister for Planning	4.00 p.m.

The first group of working papers for the Seminar-the Draft Perspective Plan frame, sectoral programming by Mr. N. Mahalingam (Paper No. 1), Dr. D. Bright Singh (Paper No. 2), Industrial Complex Studies by Dr. V. Shanmugasundaram (Paper No. 6), Area studies by Mr. E. P. W. da Costa (Paper No. 7), Regional Planning by Mr. S. Venkataramanan (Paper No. 9) and Mr. T. S. Venkataswamy (Paper No. 10) and participation by Universities in Perspective Planning by Dr. A. Ramaswamy (Paper No. 11) was despatched to the 75 participants on August 15.

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August Madras Development Seminar :

The August Seminar paper, Communication Industry in Tamil Nadu by Dr. V. Shanmugasundaram, Professor and Head of the Department of Economics, Madras University together with a summary of the discussion at the Seminar presided over by Shri C. R. Ramaswamy, Programme Executive, All India Radio, Madras appears as the first article.

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Second Article :

Extracts from a paper on the Economy's Call to Scientists appears as the second article.

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Special July Seminar :

The paper on Fiscal Polices and Employment Promotion by Dr. Arnold C. Harberger, Professor of Economics, Chicago University, U.S.A. discussed at a special meeting of the monthly seminar on 24th July, together with a summary of the discussion chaired by Mr. R. Venkataraman appears as the third article in this issue of the Bulletin.

COMMUNICATION INDUSTRY

By

DR. V. SHANMUGASUNDARAM,

Professor and Head of the Dept. of Economics, University of Madras, Madras-5.

1.1 The Intellectual Basis: I largely owe it to my discussions with a young publishing executive in India who in his global coverage of the communication industry, which he believes includes book publishing, was convinced that in India before long we must think of the communication industry as a major growth area.[1] My earlier hunch was strengthened, and I now have reasons to believe that the development of a Centre for Mass Communication Research in each of the leading Indian Universities should be established, to develop expertise in journalism and other mass media techniques.

1.2 Universities and the Communication Industry: As a University don the first question I asked myself and sought to answer was whether Universities and Mass Media agencies are not rivals. Among the numerous books and research papers I read through with this question in mind, the one which gave me the convincing answers were the two papers by Chanchal Sarkar and Everett Keinjans.[2] They believe that the Communication in a participating democracy cannot be adequate unless centres of learning and research like the Universities, evaluate, intellectualize and universalize certain theories. In the absence of such efforts mass media would become a propagandist effort rather than an educative and humanising effort. One of the inhibiting factors in India is the low literacy level and this limitation is worsened by the easy appeal of the popular films and official broadcasts. Television in some parts of India touches only the fringes. The communication industry which I propose to discuss here should be viewed in the light of its complementarity with Universities, and other institutions in the participating democracy of our country.

1.3 The Mass Media of the Communication Industry are:

(1) Folk lore, village ballet, tom-tom, etc.,

(2) the regional language press,

(3) the national press,

(4) the publication of books, journals and periodicals,

(5) the radio, telephone, telex, etc.,

(6) the television,

(7) the film, dance, music and creative stage,

(8) foreign diplomatic missions.

1.4 Mass Media of Village Folk lore, Drums etc.: Communication in the villages is still the beating of the drum by the village headman announcing the arrival of the officer, the spread of disease or the commencement of a local temple festival. With the Radio which is remotely controlled in the far flung regional centres of India, the news-

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1. I refer here to my discussions with Mr. N. Kumaravel, Managing Director of Allen & Unwin, London.

2. EVERETT KEINJANS: "Cross Roads in Communication", Asian Mass Communication Research and Information Centre, 1972, Occasional Papers, 2.

paper which follows the holier-than-thou urban attitude and spurns anything that is local or regional, one has a hunch that the villages may be lifted from decadence through communication technology. The street corner gossip should soon be substituted by healthy participation in the State, National and International communication system. We have to develop district press and local units for broadcasting and other media of communication. The media of mass communication in a village is traditional, and does not as yet make use of modern science and technology.

2.1 The Language Press Vs. The English Press: The language Press is the main source of democratic influence in India. The English Press is confined to the cities and towns in which they are published and they seldom influence the rural side. In the State of Tamil Nadu, the influence of *Daily Thanthi*—a Tamil daily published from Madras, Madurai, Coimbatore, Trichy, Tirunelveli and Vellore had a combined total circulation of 3 lakhs in 1969. The influence of this particular paper on the masses outweighs the political impact of the English Press restricted to the towns of Tamil Nadu. Any policy meant to develop the newspapers of India ought to be in respect of the Indian Language Press of the 1970's. Though the English Press might continue to educate the educated, the utter lack of concern of the English newspapers to the readers reminds us of the rare event in the White House that takes place every day. The World's most exclusive daily whose sale is only one copy is the ***U.S. President's Daily***. The English newspapers could as well print 100 copies and give them to their best friends in the Government and outside and mail the rest to their advertisers. The dull editorials, the sermons borrowed from the latest European literature smacking of plagiarism, the idiom and set phrases which die hard only with the extinction of those who learnt their English in the 1920s and 1930s call for a Society of Prevention of Cruelty from English Newspapers (SOPCEN). And surely with all the commercial motivation of their concern for English, they account for the alienation of the English-reading Indians. It would be a useful piece of research to study the Bengali, Punjabi, Maharashtra, Tamilian areas of India and to assess the role of alienation played by the English press in India.[3]

2.2 Bright side of the English Press: With the great cartoonists of the world like R. K. Lazman and Shankar, with more than 100 years of Indian cartoon history (1850-1950), we have perhaps some of the most creative artists in the field of journalism and but for their themes we may not have fully realized the benefits ofthe English press in the 25 years after Independence. They know the language of democracy: sensationalism is not its characteristic. Yet, they are far removed from their own surroundings and take care of the editors, advertisers, and contact men in Government and business. This is crude commercialisation of the press.

3.1 Indian Newspaper Statistics: Newspaper statistics are notoriously unreliable. The response for the collection of statistics is poor. The Press Institute of India itself is not prepared to collect an alternative body of corrective statistics. The main source of newspaper statistics in India is the press registration reports, and that is not considered to be above mistakes.[4]

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3. NIREEKSHAK, Economic and Political Weekly, 21 March '70.

4. "Vidura", Vol. 6, No. 2, May 1969, pp. 1-3. Two PII Staffers Miss Indira Madan and Mr. Alan Chalkly on "the Economies of the Press". The statistics are collected under the ***Press and Registration of Books Act*** by the Registrar of Newspaper for India. He brings out an Annual Publication entitled PRESS IN INDIA. I have drawn data for this paper from the 1970 issue.

3.1.1 Need for creative Indian Newspapers : Creative news editing in India could be from (a) the commercial angle just as in Amercian journalism, (b) from the socialistic and ideological angle. The latter is the Soviet contribution to the use of mass media of communication which sets very high standards of morals, economic motivation and create the urge for social and economic equality, (c) An uncritical hangover from the past which is typical of Indian news editing. During the British days the rise of the press was subject to numerous press Laws. The Englishmen were great lovers of the freedom of the press and the British missionaries in India have also espoused the cause of humanitarianism in the Indian Press. The official bureaucrats, the humanitarian missionaries and the *laissez faire* minded businessmen—all of them English—sincerely tried to establish a free press in India almost from the days of the East India Company. And this was the more pronounced attitude in the late 19th century[6] in which the nationalist press was born.

During the last half a century the English press remained a mere shadow of the earlier days. Political news, ministerial utterances, undigested reproduction of news agency reports, unimaginative or non-idealist headlines characterised the English press. The readers depended on books, foreign journals and their own pet theories for background information.

The future of the press as a national agency depends on its turning its attention to (a) news of social concern and welfare of the people, (b) news meant to encourage work without supervision, hard manual and mental work and pride in the quality of human effort, (c) discouraging supervision, bossism, undeserving reward based upon heredity, vested interests, privileges etc., and (d) emphasis on local news, persons and situations without impairing ideal of the international brotherhood of man. Neither narrow nationalism nor anti-regionalism would serve the purpose of mass communication, however much market economies of a short term nature might wink at the survival of the existing English press.

3.2 Press Advertisement : Is it the Camel and the Tent ?

Advertisements play a role of subsidising the prices at which the newspapers and magazines are sold. In this process the press policy also makes distortion. Out of 289 newspapers which furnish data to the Registrar, 130 earned between 25 to 50 percent of their total income through advertisements.[7] And 15 papers got 75 percent or more of their incomes through advertisements. One can understand whether it is the reader or the advertiser who really wields an influence over the press. The Government patronage in respect of Press advertisement is no less significant. 174 newspapers obtained 10 to 49 percent of their income from Government sources. A privileged class of 10 papers got more than 75 percent from Government sources. Apart from the monetary reliance, the allotment of space for advertisements has been assuming disquieting proportions. Some of the most popular dailies—6 of them, allotted more than 60 percent of their space for advertisement.

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5. CROMWELL A.A. : Creative News Editing, (Iowa, 1969) A book of this nature makes the assumption that anything that can be made to sell in larger quantity with the possibility of a higher level of profit would serve and the goal of Journalism.

6. SHANMUGASUNDARAM, V. : *British Investment in India*, (Mss. Oxford, 1964)

7. Report of the Registrar of Newspapers, 1970 (New Delhi, 1971)

3.3 Man Vs. Machines : The largest employer of manpower for the production of a single paper is ***The Statesman*** of Calcutta which employs 1308 persons. The cost of such a huge establishment needs advertisement revenue. ***The Hindu*** of Madras also has a record of employing the largest number of working journalists (193) on the editing and reporting sides. But the economy of the big press arises from another angle. 15 big, 22 medium and 20 small newspapers composed the printing matter on machines. The rest, almost 200 dailies, are still manually composed. There ought to be a clear State policy of increasing the production of linotypes and cathod ray composing machines with a view to ensuring a high technical output from the Press. *The Hindu* has another record of having introduced the facsimile method of printing. A simultaneous Coimbatore edition with that of Madras edition is brought out. This is the first Newspaper in India to adopt this method.

3.4 Periodical Press · The periodical press in India reveals a very low interpretative role in an Indian communication system. No news is meaningful without background information, intellectualisation of the issue and corrective ideas. The system of syndicated columnists, free lance writers has to be developed in India. The pattern of periodical material needs correction. There are nearly 9,000 periodicals—35 percent of them consist of those dealing with news and current items, 16 percent is literary and cultural. Religion and philosophy (11 percent), Commerce and Industry (5 percent) reveal the lopsided priority in this area. What is worse, the paucity of medicine and health (344 periodicals), Social Welfare (294 periodicals) are disquieting features of the periodical press in India. There are 101 journals devoted to science and technology and a majority of them appear in English. The total circulation of these journals is around 3 million copies. We should target for at least 3 million copies assuming that at least 1 in 20 will read more than a few periodicals.

4.0 The Book Industry :

4.1 Madras as Pioneer : At one time the City of Madras occupied a pride of place in the publishing industry of India. We would not know much about the Indian National Congress but for the pioneering efforts of G.A. Natesan who maintained shorthand records of all the speeches of Indian patriots and made available copies of Presidential addresses and proceedings of conferences in printed form. Today the researchers all over the world utilize these materials. The branches of the Oxford University Press, the Macmillan, the Longmans have developed to substantial dimension in the City of Madras. However, this continuing lead which Tamil Nadu has had till the 1930's was lost to certain other parts of India for several reasons. The printing presses which maintain high quality continue to progress in the City. The Hoe & Co., Madras, the B. N. K. Press and Associated Printers are some of the presses in Madras well known throughout the Country. But their records as publishers of books are becoming limited.

4 2 The Impact of Government Policy : The Book industry in the non-Governmental sector has another challenge to encounter today. Students from standards I to XI will be using the nationalised text books. This will take away about 60 percent of the school book business from private Indian publishers.[8] In respect of text books and reading material for college students, the Indian publishers have to face the competition from the

8. Bhavan's Institute of Communication Studies : Alpha (monthly) Vol. X, No. 1, June 1971, p. 6.

British, American and Russian publishers who bring out heavily subsidized material of high technical quality. The English Language Book Society brings out books from 60 publishers and has a market in 45 countries of Asia and Africa. Out of 400 titles published since 1959 every one is of a very high international standard. The American publishers have also invested over Rs. 5 crores out of P. L. 480 funds and sold the books at 1/5th of the American price.

4.3 Conditions for the growth of the Indian Book Industry: The Indian publishers cannot maintain a competitive standard without fulfilling the following conditions:

(1) a sufficiently large quality-wise market,

(2) the supply of good writing and white printing paper at stable prices. The paper accounts for 50 percent of the cost of production and there has been a steady increase of 20 percent to 30 percent in the price of paper each year,

(3) adequate supply of Indian and imported paper of uniform and good quality,

(4) printing, binding and composing materials should be available at stable prices.

Currently in India, the economies of publishing a book works out as follows:

(i) Cost of production — 30 to 40 percent
(ii) Royalty — 15 to 20 percent
(iii) Trade discount — 20 to 25 percent
(iv) Publisher's margin — 35 to 15 percent.

The fluctuating margin of the publisher is on the assumption that adequate copies will be sold and something will be left behind after meeting expenses on publicity, postage and mail orders etc. The Federation of Publishers and Book Sellers' Association of India has recommended that the Banks should advance money on printed books. Today the publisher depends mainly on money-lenders, whereas the manufacturer of note books gets at least 60 percent of the stock as bank advances. The Book Industry needs protection from the Postal Department which charged in 1971–72, 10 paise for the first 100 grammes and 5 paise for every additional 50 grammes or part thereof. If the news-papers rates of 2 paise of the first 50 grammes and 2 paise for every additional 50 grammes and or parts thereof is applied, the book industy would grow faster. Active enterprise, market, finance and postal support are some of the urgent needs of the Indian book industry.

5.0 The Radio:

5.1 All India Radio: Among Media of Mass Communication, the Radio occupies a dominant place. This has been discussed in an earlier seminar led by the Director of All India Radio, Madras Division.[9] I wish to concentrate in this paper on some of the quantitative and qualitative aspects of the radio. Compared with many broadcasting Stations of the world, AIR in recent years has acquired a high measure of professional competency in broadcasting, though it is not as independent as the BBC. The AIR is supposed to follow a neutral policy and succeeds in doing so except when a major

9. Madras Development Seminar on the Role of Radio in Promoting Social Change and Economic Development in India, September 1971. Vol I No. 9 of the Bulletin of the Madras Institute of Development Studies.

propagandist decision of the Government distorts the self-ordained policy. The confidence of the public in the independent character of the AIR cannot however be strengthened unless it becomes an independent corporation. The innovative role of the AIR is the involvement in an objective manner in current problems of the Country and its commitment to the different universities in India in co-ordinating and broadcasting academic programmes or these autonomous bodies.

5.2 Need for Indian Broadcasting Corporation: An IBC (Indian Broadcasting Corporation) should be formed. This seems however a distant possibility. The AIR has a total realised revenue of Rs. 13 crores and Rs. one crore from television and radio licenses. In the next decade we can expect a five fold increase in the number of television and radio licenses. To operate such a mammoth public enterprise with sufficient safeguards that will ensure autonomy and independence from all vested interests including the Government of the day would be an essential condition for democractic debates and national progress. Norms to prevent the abuse of sensationalism, horror, sex and crime entering the field could be ensured by legislative measures. Besides commercial services, the new services of slow dictation of news, language, teaching are some of the current and specialised services rendered by the AIR. The method of management, the identification of public interest and further educational programmes provide scope for abundant improvement of AIR. The radio and television industry in India is an outstanding example of Indian development in material and physical technological growth outstripping the poor Media of mass communication and of our inadequate social technology.

5.3 Telephones, Teleprinters etc.: According to a World Bank Report there were 255 million telephones in the world in 1970 Except for the USA and Canada all telephone net works are owned by the respective Governments. The United States and Sweden had more, 50 telephones for 100 of population. In India it was 0.2[1], Ceylon 7.7 and Singapore 6.5, and China 2.5. The increase in the productive capacity of India suggests that before long we might have an adequate number of telephones in the country.

The Indian Telephone Industry at Bangalore, and the Hindustan Teleprinters of Guindy at Madras have created international records in productivity and quality. Their products are in demand in many countries. Besides meeting priority needs[10] within India, exports to the order of Rs. 50 to 90 lakhs a year have been recorded between 1966 and 1971.

6.0 Television:

6.1 Technological Possibilities: Television in India may steal the thunder in the developing world. America's National Aeronautics and Space Administration has lent India's Department of Atomic Energy, an ATS-F Satellite which is stationed 22,300 feet above India to beam programmes to various parts from early 1974. The wireless advisor to the Government of India has estimated that the Satellite system and its ancillaries would cost Rs. 210 crores spread over 15 years or Rs. 14 crores per year. The annual income from T.V., license and advertisement would not be less than Rs. 200 crores a year. Instead of considering Television a luxury, if we put Television to good use we might well be equipped with a major source of revenue and communication and might turn a new leaf in our communication history. A 25 year master plan for India has been drawn up and it should receive priority.

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10. ITI: This is ITI, and the handouts, (ITI, Bangalore-16), 1971.

Transmitter	Capital Rs. in lakhs	Foreign Exchange Rs. in lakhs	District (Totally or partially covered)	Area covered 66	Estimated population
				sq. m.	
Srinagar (1971)	167	47	Srinagar, Anantnag	1430	0.85 M.
Delhi (increased range 60 km) (1970)	72	50	Delhi, Meerut, Bulandshahr, Rohtak, Gurgaon	3270	4.8 M.
Bombay (1971)	102	40	Greater Bombay, Kolaba, Thana, Poona	5770	6.8 M.
Calcutta (1973 ?)	99	40	Calcutta, Howrah, Alipore, Hoobly, Burdwan	4640	10.5 M.
Madras (1973 ?)	101	40	Madras, Chingleput, North Arcot	3750	4.3 M.
Kanpur/Lucknow (1974)	99	40	Lucknow, Barabanki, Unnao, Kanpur	3170	3.2 M.

Based on 1961 statistics
subject to error 20 percent
— UNESCO Report

6.2 *T. V. as Educational Medium*: Education through TV and the Radio could spread fast and more effectively after necessary investments have been made.

7.0 The Film Industry:

7.1 *The New Film Cult in Tamil Nadu*: Next to the religious and social institutions, the film industry today has perhaps the most dominating influence on the minds of the people. Around 400 films a year are produced involving ten languages, Tamil and Telugu together constituting more than a third of this number. India has now become the first ranking country in the world in the film industry, improving upon the Japanese record. The export demand is mainly for Tamil and Hindi films and nearly 100 countries in the world buy these films. In the year 1969-70, three crores of foreign exchange was earned from the Indian film industry. Nothwithstanding this international record, research in respect of the themes, motivations and educational utilisation of the film leaves much to be desired.

7.2 *The rival aims of communication and education*: There are powerful chambers of commerce, but they have to be tempted out of the purely commercial practices and brought into the educative circuit. Among the main bodies connected with the film industry are the Film Institute of India at Poona which trains 120 students in Movie technique including 20 from other countries. This Institute has made some impact by introducing new themes. We need atleast 4 Institutes to cover the different regions of India. The Institute attached to the Guindy Polytechnic campus in Tamil Nadu should be developed to meet the exacting demands of the southern region, and the South East Asian countries in film technology research. The National Film Archives of India located at Poona, the Children's Film Society of Poona, the Film Division of the Government of

11. VIDURA, February 1971, p. 6

India at Poona and Central Board of Film Censors established under the Cinematograph Act of 1952 are some of the other institutes connected with the Film Industry. The educational agency, a National Institute of Audio Education, now renamed Department of Teaching Guides (National Council of Educational Research and Training) at Delhi is doing commendable work in 16 mm films. Compared with the outlay and quality of films of the British Information Services, the British Council and the USIS, the quality and the range of operations of the Indian educational and documentary films are at the starting stage.

7.2.1 The acting in the films particularly in the more conservative areas of Southern India has been considered as an inferior occupation until recently and that has accounted for the people from different sections of the society not taking serious interest in the film industry.

7.2.2 In recent years this attitude has been broken symbolically, but as yet overspecialization in personalities rather than in themes, lack of institutional research for identifying markets and themes seem to be some of the weak spots of the Indian, particularly Tamil Nadu film industry. The all-India competition and tax policies are severe. Before long one can expect a change for the better in the Tamil Nadu film industry. As social themes and progressive economics have begun to characterise the Tamil Films more than films in any other region of India.

7.3. The future of the Film Industry: In the years to come, one may expect a great spurt of production of cinematography projectors and other 8 mm and 16 mm cameras and other optical and electronic goods. The attitude of the Government in prohibiting the import of cameras has created an illegal market for these goods which is neither healthy nor rational. The Japanese because of their skill have exceeded the great standards set by the German optical and camera industry. This is a challenge to Indian technical and skilled workers. The policy of the Government must actively promote the production of cameras, lenses and other photographic instruments in the long run. Any one who looks at the box cameras made in India in collaboration with the well known firms of the world, will note their shoddy character. This is an encouragement to smugglers and dealers in contraband products.

7.4 Need for an innovative industrial policy: Either sufficient thought has not been given to the Film Industry by those in charge of Indian Industrial Development or our outmoded concept of what is literacy has stifled the growth of our photographic and film industry. As we move to a new age in which illiteracy will be eradicated and as we emerge as a country with a net-work of mass communication, we ought to take up the challenge of producing quality products, involving technical educational and other institutions in the Country as buyers. The electronic estates of Madras and the other industrial estates of India are the producers of sophisticated photographic film and television equipment. The achievements of the Radio Industry should become comparable to that of the film industry. The State of Tamil Nadu and particularly the City of Madras can lead as a growth centre in this process.

8.0 Publication by the Foreign Missions: Our understanding of foreign countries has been very much in the context of the Anglo-Saxon region. The news agencies, the location of foreign correspondents, the training given to our diplomats, and the academic

background of men in Government and political life contribute to the strengthening of the bias. The effort of the USSR is to break this tendency. Among the 111 publications by foreign diplomatic missions in India, 46 are from the USSR. The USA produces 17 periodicals. Next in the order are G.D.R. Bulgaria, France, Cuba and UK, with 7, 5, 4, 3 and 3 respectively. Periodicals by Indians, on foreign countries written from the Indian angle are a need if this understanding is to be truly global.

9.0 Inadequate Indian Communication System :

9.1 Some International Comparisons: We are not equipped as a nation for any major dialogue. In a nation of 550 million people with nearly 360 million illiterate even the current newspaper circulation of 6 million copies which works out to 13 copies per thousand population is a low figure. 505 per thousand in Sweden, 451 in Japan and 39 in Ceylon, are circulation figures to be remembered in this context.

9.2 Government and the Press: Inadequate as the communication system in India is, the use of it is even worse. Most newspapers in India follow the "Luggage label policy". Uncritical presentation of news, the preponderance of political materials and poor economic and social intelligence characterise the Press in India. Not all blame can be laid at the door of the Government, because, it is only one of the institutions in a pluralistic industrial society, and has its own interests to defend; [12] it cannot be a *model* news agency. The press as a guardian of freedom in India should use effectively the very scarce consumption of newsprint of 0.3 Kg. per capita as against 1.1 Kg. in Ceylon, 7.3 Kg. in Israel, 12.0 Kg. in Japan, 25.0 Kg. in UK, and 26 Kg. in Canada. Any effort to stifle the production or import of newsprint is a direct effort in restricting the expansion of the press. Similar lines of reasoning are useful for the expansion of the radio, television, dance, drama and music. The growth of the communication industry is the key to success in a participating democracy. It will prevent the emergence of a monolithic, hypnotising and dictatorial state. It is hoped that the future of India would be adequately safeguarded by a rational and forward looking policy towards the communication industries.

9.3 The possible Targets: We have just 8 million Radio receivers, by the U.S.A. standards it ought to be 550 million to ensure 100 percent coverage. Television has been functioning in Delhi for some time and yet the number of receivers is not more than 8 thousand. The minimal targets set by the UNESCO were 100 copies of daily newspapers per thousand population, 50 radio receivers and 20 Cinema *seats*. The Indian figures are 13, 13 and 11 Cinema seats per million people. Our printing industry uses outdated linotype machines, but in 1980's these would be replaced by electric cathode ray tube setting. Satellite systems are going to vitally affect and rule our life in all matters of communication. This is called "Communication Implotion".[13] India should get ready for this communication age.

10.0 Centres for Mass Communication Research: Until recently the British, and modelled on it Indian thought, on journalist education was that it should be experience based. Recently Dr. C. W. L. Bevan, Principal of University College in Cardiff initiated

12. LASKI, H.J. : Grammar of Politics, (London, 1948)

13. SARKAR, CHANCHAL quotes Marshall Mecluhan as the coiner of this term. *Vidura*, Vol. VI, No. 1, February, 1969.

a university course in journalism. 16 students (14 men and 2 women) who have taken degrees from various Universities have joined the course. The Scottish education department agreed to support two students and the rest are being given stipends by the University. Journalism like any other profession requires post-graduate training of a high. order. The Stanford, Syracuse and other Universities in United States have been for a long time exponents of the idea of Universities as centres of journalistic training. In India the Universities of Madras, Calcutta, and Punjab have been pioneers in journalistic studies. It may be hoped before long that Indian Universities will establish centres of Mass Communication and spread journalism education at advanced levels.

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In the discussion of the paper at the Seminar in the Seminar room of the Institute on Thursday, August 31, chaired by Mr. C. R. Ramaswamy, Programme Executive, All India Radio, Madras, the purpose of the Communication Industry was widely discussed. Its output according to some should be aimed solely at information, to others it should be the instrument of social change, while still others referred to its output aimed at developing ideas and the cultural, artistic and literary life of the individual and society. There was general agreement that the industry is the major source of information, that its information base should distinguish between straight reporting, which in view of the mass of information will have to be selective on the one hand and interpretation and value judgments on the other. The Press in India is inadequate from the point of view of these outputs. The English Language Press, as far as the major newspapers are concerned, tend to be documentaries rather than media of mass communication. There was disagreement with the characterisation of the English Language press in the paper. What is needed is for those who use these newspapers to become themselves transmission agents to others who do not have access to them.

The Vernacular Press has a much greater mass impact but its standard of journalism and levels of news reporting need to be considerably improved. The problem of the diffusion of newspaper ownership for both the English and the vernacular press needs to be attended to in order that the development and the democratic objectives of the country may be more effectively served. The role of advertisement, particularly governmental advertisements is a serious one which tends to influence and distort the function of the news media. This needs to be reviewed and controlled by legislature.

Books and journals are still in the beginning stage. The precondition for their effective development has yet to be created in the country. In the case of journals, it was noted that the largest number, 2200, are in Hindi serving 33 lakhs of subscribers, while Tamil journals appear in the 4th category with 20 lakhs of subscribers. The limited nature of Science and Technology coverage in our journals and periodicals as well as in the press needs to be corrected.

Apart from the limitation in the form of journalism. another important gap in our mass media output is the lack of coverage of the major part of our country namely the rural area. There is a distorted picture conveyed to the people through our media which concentrates on the events surrounding our small urban society, notably Delhi. Part of the reason for this gap in newspaper coverage flows from the fact that we do not have an

information net work covering the major part of our society—the rural areas. National development and political democracy require that people in our villages and hamlets as well as cities know about what is happening there as well as the happenings in the metropolitan centres.

The Communication Industry in the country is half in the private sector and half in the public sector. The press and the film function in the private sector, while the radio and television operate in the public sector. Books and journals belong to both sectors. Does this sectoral division of the operation of our mass media conform to the twin objectives of development and democracy? It was generally felt that the media should operate in the private sector with a high degree of professionalism, competitiveness, diffused ownership and independence. From this point of view the present situation of the radio and television is unsatisfactory within the limits of public ownership and control they are doing a good job of reporting, educating and entertaining. However, they have a tremendous impact and to ensure that they carry out the responsibility efficiently and in the interests of the people, they should either be moved out of the present government controlled structure into that of a statutory body with autonomous attributes or if they are left as instruments of government two or three independent radio and television authorities in the private sector should be created.

THE ECONOMY'S CALL TO SCIENTISTS*

An Appeal: And now as you leave the portals of this great institution and plunge into life, I have an urgent and solemn appeal to make to you. Our country's economy is in a bad way and I appeal to you, you scientists engineers, to help. What do I mean by our economy being in a bad way? We in India finished the sixties at a 3 per cent annual rate of growth, while all the other poor countries like us registered a 4-6 per cent rate. I leave aside the Japan miracle which averaged 10 per cent and the Federal Republic of Germany miracle which averaged 6 per cent. And then we started off the seventies with a 6 percent growth in 1969—70, but slumped to 4.7 per cent in 1970-71, and to 3 percent last year. Who is the villain of this tragic scene? It is not agriculture which has been performing continuously well for the last four consecutive years at growth rates of 5-6 per cent. (This is a miracle because the world agricultural average is never above 3 per cent). Even here I have one grumble. This year we have been caught unprepared by the drought which we should have foreseen and have lost a greater part of the Kharif crop. The villain could not be the tertiary sector which has also been galloping along at a high rate of 6 per cent. (I am not sure that the services part of this growth is really healthy and wealth producing). We are then left with the secondary sector—manufacturing, mining and quarrying. All pre-conditions—the huge capital investment of over Rs. 10,000 crores, the vast resources endowment of the country, the skilled and trained work force and a huge internal market complimented by the growing demands of the Third World for our manufactures—indicate that the industrial sector ought to be growing at a minimal annual average rate of 12 per cent. The startling record however is that the industrial growth rate was 6 per cent in 1969, 4.6 per cent in 1970, 3 per cent in 1971 and we are down to 1.5 per cent so far in 1972. That was almost the first calamitous admission of our new Minister of Industrial Development. This is the abyss into which we have sunk and it is to help pull us out of it that I appeal to you, the scientists who are setting forth from to-day to work in our industrial undertakings. We can, we must climb back to 6 per cent this year, to 7–8 per cent next year and average 12 per cent during the Fifth Plan.

Scientists Heritage: I readily accepted your Director's request to be your Chief Guest to-day, because I know that you can work the miracle that I have outlined and I came here to ask you for this miracle. Why do I regard you as the key to the industrial regeneration of our country at this moment of desperation and dire need? I have many reasons. First I recall consulting Prof. Pierre Auger, the Assistant Director-General of Science in Unesco in 1951 about whom we should recruit to meet a request from Government of Chile for a survey of its major river system, on which a hydel power-irrigation dam was to be erected. He said: if the job is low level and practical, you should send a team of practical engineers But if it is, as is the case with this Chilean project, a high level appraisal, you must use a team of scientists. You will notice that I have been addressing you as scientists, because as graduates of this elite group of institutions you are scientists, scientists engineers. In fact it is thanks to you, and compeers like you the world over, that engineers at your level are today classed as scientists. And it is as scientists that you hold the key to our industrial revival.

* Extracts from the Convocation address by Dr. Malcolm S. Adiseshiah at the Indian Institute of Teachnology, Madras, on August 26, 1972.

A second reason for my trust in you is that evidenced in the demand for your services in the public and private sector. On my last visit to I.I.T. Powai, in 1969, the Director Mr. Bose read me the names of those graduating that year, every one of whom had already been spoken for and engaged for employment—by one firm or another. This is really an outcome of the country's confidence in you, at a time when educated unemployment has passed the 2 million mark, when, according to the C. S. I. R's analysis of the 1971 census, 3 86,000 B.A s , B.Sc.s, and B.Com.s, are unemployed and 1,62,000 scientists, engineers and doctors are unemployed—the unemployment among engineers being 5 per cent. Being in the privileged group of the much sought after, I have no doubt that you will justify this unbounded faith in you in helping the economy rise to its potential.

Third you are privileged also in the normal economic sense. You are not only members of the acknowledged elite institution of the country. Recent studies of the I.I.T.s in the publications of the Institute of Applied Manpower Research and the Economic and Political Weekly quantify your elitist character. The I.I.T. costs per undergraduate student is Rs. 4,200 per annum (neglecting opportunity costs), the staff student ratio both undergraduate and post graduate is 1:6, and 80 percent of you come from the middle class and above (with parental income of Rs. 500 per month and above) and 49 per cent from the parental monthly income group of Rs. 1,000 and above. I need not remind you that the per capita monthly income in this State is Rs. 50 and in the City is Rs. 120. And so you owe a social duty to the deprived and deterred and you can, and I know that you will, discharge that duty as the scientist entrepreneurs, that our economy needs urgently. I told you earlier that our industrial sector does not lack any of the inputs needed to achieve its 12 per cent growth break through. Now I would like to tell you what it lacks—the only thing we lack in the country—our only bottleneck, is scientific entrepreneurship and for me you are it. You can provide this vitally missing element.

And finally I believe that scientists are being given a last chance to come through. We have at the head of the scientific community, a minister who has staked his all on science and Technology. The constitution of the National Committee on Science and Technology, the draft science and technology plan which is now being readied far ahead of the Fifth Plan, the full acceptance of the Sarkar Committee report in the regeneration of C.S.I.R. (unlike the way we treat some of the other reports like the Wanchoo report and the shadow cast on the Raj Committee report by the incredible support given by those who set it up in the dismantling of the only Agricultural income tax system that exists for the Country in this State), the plans for the use of scientists to prepare feasibility studies for Fifth Plan projects, and the break placed on the facile import of foreign technology through foreign collaboration agreements, which are being signed at the rate of 5 per week, through the transfer of the responsibility for their scrutiny and approval from the Directorate General of Technical Development to NCST, the plan to make R & D compulsory in all future licenses to be issued,—all these are an indication of the reliance of the government and the country on you scientists. Today, more than ever before in our short history as a free country, you scientists have been given your full reins—Will you use these reins to ensure that the economy ends its stagnation and surges forward?

Scientists' Vocation: For this urgent and imperative task you have been equipped to create for the country the resources that we need. Tagore's great poem which is our

National Anthem today and the venerable vedic hymns remind us that India's natural resources, like the world's are gifts of nature. But they are not all used and they are not simply gifts. The waters of the Ganga or Vaigai, the rocks of Himachala or the sands of Kovalam become resouces only as a function of current technology, the level and stage of your scientific knowledge and technical know-how. The progress of scientific and technical knowledge has so vastly enlarged the scope of what we consider to be natural resouces that some of nature's most blind and hostile forces, the energy produced by our water falls and the searing heat of our summer sun, the nuclear fuel fed by our mineral sands, the ore laden hillock that we need to play around in Kanjimalai, the terrifying ocean and its mysteries, et al, have today been harnessed in our service by the most varied scientific and technological methods.

From this two results follow. First we know that it is only by introducing new and economically valid techniques that new elements in our environment may be utilised, that new natural resources, in the full sense of the term, may be created. There is recognition of this creative power of science in the second remedy for our poverty proposed by the Union Planning Commission's Approach Paper to the Fifth Plan presented to the National Development Council last May. The potentional of science and technology for increasing production, locating substitutes and substituting imports will have to be fully exploited it says. You have this awsome responsibility of creation.

Second there are no non-renewable resources. This is a somewhat daring statement to make after Stockholm, after the Club of Rome Scientists warn us that their computer run model shows that our non-renewable resources will near depletion in a hundred years. These warnings seem to receive support from the exponential growth of the consumption of our world's non-renewable resources taking only a single country-the United States. The U.S. which is now consuming over 50 percent of these resources, contrasted to the 5 percent that we India and all the poor countries of the world use, will become an even larger consumer in the next decade. If its present pattern of consumption of petroleum continues, it will be importing in the eighties, $20 billion of petroleum per annum instead of the present $3.5 billion, and will similarly increase its imports of beauxite, copper, aluminium and natural gas. Against this view, I stand by the conclusion of the 1952 Materials Policy Commission—that because of science and technology and its irreversible progress, there is no such thing as a non-renewable resource, there is no general problem of their scarcity because of, if I may dare summarise the five volume of report, (a) the constantly expanding resource base, (b) the factor of substituality, (c) the multiple use of each resource research leading to development and better management. There is an environmental and biosphere price for over use and on that I believe the Club of Rome Scientists are right in advising the affluent countries to avoid that terrible price by adopting a no growth policy.

The far reaching second result that I have referred to is that for us in India, as for others, science and technology are themselves the primary resource. I want to emphasise this point on who and what our resources are because the Planning Commission's Approach Paper traces "the main causes of our massive poverty to open unemployment, under employment and the low resources base of a very large number of producers in agriculture and the service sectors". What are our resources? Are they low? You, and not our energy sources, our mineral endowments, or our soils, are the resources for the industrial regeneration of the country. You scientists going forth from I.I.T., Madras are

that because you will now apply the research and investigation techniques in which you have been grounded to the revival of our economy. In the organisation of our production and our economy generally it is research enterprise that will take the place formerly reserved for the entrepreneur enterprise. We have had to rely in the past and still do today on the individual entrepreneur, and you can name them, who were and are—all too few, alas! for our vast economy. But today it is research which embodies the entrepreneurial qualities of innovation, investigation, discovery, working out new resource combinations, adjustments and allocations in relation to present and potential markets. The days of the individual entrepreneur—the grandmaster of strategy, the reformer and revolutionary, the predatory giant—who brought his superior knowledge, forecasting ability and talents to play, have gone, not only because of our system of industrial licenses, the abolition of the managing agency system, the monopoly and restrictive practices act, the nationalisation of banking and insurance which leaves no free capital market and the land ceilings act. They are gone primarily because of the emergence of systematically organised research and investigation, which involves methodic exploration into the known and unknown the imperfect and the unbalanced and even more important for our economy—that twilight zone of the half known. We will still have the great names but they will be facades for the engine rooms where the real innovation and breakthrough will be made. In that sense you scientists leaving here are the back room boys, who must make our industrial engine move forward again at the rate and speed which our country—the deprived and disinherited part of our country—demands. The success and realisation of our anti-poverty programme, which is the major theme of the Fifth Five Year Plan that we are beginning to plan, will depend on the success of your efforts in moving our lagging industrial sector.

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FISCAL POLICIES AND EMPLOYMENT PROMOTION *

By

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I A GENERAL DIAGNOSIS

The diagnosis of the problem of employment promotion has already become almost standard. For all developing countries capital is a relatively scarce factor of production, and even with considerable efforts to expand the amounts of private saving and of publicly mobilised funds, the investible surpluses of these economies will continue to be severly limited. At the same time, the growth of output in the last two decades has in most cases been relatively fastest in activities whose capital labour ratios are relatively high, and the amount of additional labour that has been absorbed in the modern industrial sector has been disappointingly low when compared with the overall growth of the labour force. The almost ubiquitous concern, then, is that a continuation of development strategies biased towards capital-intensive investments is not adequate to cope with prospective labour-force increases, and will tend to exacerbate or at least not significantly alleviate the twin problems of unemployment and underemployment.

At the most general level, the proposed " solutions " to the problem are a matter of simple arithmetic. The same amount of net investment, done in activities with lower capital intensity, will absorb more of the increased labour force than if the same funds are applied to activities of higher capital intensity. Similarly, if ways could be found of using the existing capital stock more intensively, additional labour could be absorbed with little or no extra investment. (This latter solution receives greatest prominence in the many countries where recent data point to a substantial underutilization of the existing capital stock).

But these very general solutions are patently facile, and in themselves do not help much in the choice of appropriate policies. It makes no economic sense, for example, to decree that existing capacity should be more fully utilized, when the owners and/or managers of that capacity would be more than delighted to expand their output (and correspondingly their use of labour) if only there were demand for such expansion at remunerative prices. Likewise, it would in general be economically unsound to require by law that the labour intensity of specific activities be increased by certain arbitrary degrees—this would in most cases amount to requiring the enterprises in question to take on labour that would be economically redundant, given the overall pattern of demand existing at the time, with the degree and economic cost of such redundancy varying widely from enterprise to enterprise. In a similar vein, it is folly to think that denying or severely limiting the access to investible funds by capital-intensive activities would solve the problem. Many of these activities – electric power production comes immediately to mind – are critical for the overall performance of the economy, and others, though less than critical, clearly qualify as highly beneficial in spite of their capital intensity.

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* Extracts from the paper presented to the joint workshop on Employment Generation organised by the Government of India and I.L.O. in August 1972.

Thus, while no one can deny the arithmetical validity of what I have called the most general proposed "solutions" to the problem, they are far from being sound guides for policy decisions—a fact which has been widely recognised. In their search for more valid and more concrete prescriptions for public action, many students of the problem have turned to an examination of the role that past and present policies have played in determining the evolution of the existing economic structure and its configuration of capital-labour intensities. As a result of such examinations in a number of developing countries, I believe it is fair to say that something closely approaching a common pattern has emerged, though naturally there are significant individual departures from one or more parts of this pattern in particular countries.

The pattern is best described in terms of the role which the relative prices paid by enterprises for labour and for capital plays in influencing the choice of techniques for enterprises in each line of activity. Broadly speaking, in virtually all of the countries examined, the modern industrial sector of the economy was favoured by preferential access to capital funds at low interest rates, and overvalued exchange rates together with low (or zero) rates of duty on imported capital equipment. Both of these items made the importation of such equipment artificially cheap. Often these measures were accompanied by full or partial exemption from tax of the income generated as a consequence of the capital investments concerned (a device that, paradoxically, was used to the greatest degree in programmes aimed at reorienting investment towards the most backward and labour-abundant regions of the country in question). All these measures operated to make the capital factor artificially *cheap* for enterprises in the modern industrial sector. At the same time, labour legislation was typically such as to make the labour factor more *expensive* for these same enterprises. The specific policies operating in this direction were typically minimum wage legislation and social security taxes, both of which were generally restricted in coverage to larger terms (mainly the modern industrial sector) and also by other 'social laws' regarding the provision to workers of housing and similar fringe benefits by the larger employing enterprises. In addition to these policies directly affecting labour costs there was the fact that trade unions—particularly those that were strong enough to have a significant effect upon wages—were largely also concentrated in the modern industrial sector, this fact being in some cases a consequence of government policies favouring such development, and in other cases quite independent of the government's position.

Quite obviously the policy pattern just described operated to tilt the balance-and it should be emphasized to tilt it artificially-in favour of capital-intensive methods of production for the typical modern industrial enterprise. As a consequence, more capital was absorbed in the modern industrial sector than would otherwise be the case, leaving less of this scarce factor available for use in the rest of the economy. At the same time, the modern sector absorbed less labour than it would have done in the absence of these special policies, leaving more of it to be absorbed by the remainder of the economy. The task thus thrust upon the rest of the economy—of absorbing a *larger* share of the incremental labour force, while at the same time having a *smaller* fraction of the available investment funds to do it with—is one that poses serious problems of adjustment. It can easily result either in open unemployment (a likely outcome when real wages are rigid in the downward direction, or in an increased amount of under employment (about which more will be said later) or in both, and the available information strongly suggests that this was indeed the result in a considerable number of countries.

In addition, in several cases, the allocation of licenses to import raw materials was linked to the amount of each enterprise's installed capacity. This simply operated to strengthen the incentive to install additional equipment. Even if such equipment was not expected to be utilized in actual production for many years, its presence operated as a sort of guarantee that even in periods of foreign exchange stringency the authorities would permit the importation of enough raw materials to allow normal production to continue unabated. For example, if a firm had installed capacity equal to twice its normal production, it could continue normal operations even if the government cut its foreign exchange allotment for raw materials to 60 or even 50 per cent of that corresponding to its full capacity. Of course the extra capacity cost the firm money, but many cases indicate that from the firm's own point of view the extra capital expense for increased capacity was a worthwhile 'insurance policy' aginst the risk of severe materials cutbacks. From the social point of view, however, the extra investment was largely a waste of scarce capital resources, since a more enlightened import allocation policy could have permitted the achievement of the same levels of production without the extra investment.[1]

II SUGGESTED POLICY ADJUSTMENTS

The above diagnosis carries with it some obvious implicit suggestions as to how to improve the situation: to the extent that public policies themselves have contributed to the problem, their reversal will obviously contribute to its solution. I shall treat below the main policies mentioned earlier, and discuss the possible effects, in addition to improving the employment situation, that its reversal might entail.

(a) Preferential Credit Allocation and Low Interest Rates for the Modern Industrial Sector.

These, like most of the other measures to be discussed, had, in addition to biasing the choice of technique in favour of capital intensive processes, the effect of reducing costs as seen by the enterprises in question and consequently stimulating their output. This by itself would appear to be a good thing, but it must be realized that the extra capital resources taken as a consequence of the preferences had many and valuable alternative uses in other sectors of the economy—uses to which the capital was denied because of the existence of the preferences. In other words, the measures in question made capital available to the preferred sector at less than its true social opportunity cost, and it is a commonplace of economic theory that in such cases a loss, not a gain, of national output and welfare is entailed. Moreover, given the fact that the rest of the economy was much less capital-intensive than the preferred sector, the demand for labour would also be increased by the reduction or annulment of the preferences. It must also be recognised that the adjustment process would entail shifts in relative prices, with those of the commodities produced in the previously preferred sector tending to rise and those of the commodities produced in the rest of the economy tending to fall as the latter sector's output expanded at the expense of that of the former.

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[1] Probably the two best sources giving supporting evidence for the above diagnosis are *Fiscal Measures for Employment Promotion in Developing Countries* (Geneva, International Labour Office, 1972), and a report on the employment problems in Latin America submitted by the Department of Economic Affairs of the Organization of American States to the September, 1971 meeting of the Inter-American Committee of the Alliance for Progress.

(b) *Overvalued Exchange Rates and Preferential Treatment of Imported Capital Equipment.*

The direct effect of reducing or eliminating the overvaluation of exchange rates and the preferential treatment of capital goods imports, is to release some foreign exchange for other uses. To the extent that the opportunity cost of foreign exchange is higher than the effective rate that the modern industrial sector has to pay for its capital goods imports (and this is implied by the idea of preferential import treatment at overvalued exchange rates), the foreign exchange thus released can be put to more valuable use in other areas, thus adding to the contribution to national income and welfare that can be derived from existing foreign exchange availabilities. This is directly analogous to the effect, discussed under (a) above, of releasing capital resources from the preferred sector in cases where the social opportunity cost of capital is higher than its yield at the margin in the preferred sector.

It is usually the case that both things are true at the same time, i.e. not only is the social opportunity cost of capital higher than its likely marginal yield in the preferred sector, but also the social opportunity cost of foreign exchange is higher than what the modern industrial sector is required to pay in order to acquire its imported capital equipment. When this is true, the reversal of either type of preferental treatment will have beneficial side-effects. That is, the reduction of preferred access to capital funds will not only release some funds to other uses where their yield will likely be higher, but also, through its side-effect of reducing imports of capital goods by the modern sector, tend to release some foreign exchange to other uses where its economic productivity will likely be higher. In an exactly similar way, reducing the preferred access to foreign exchange for capital inputs not only directly releases foreign exchange but also would tend as a side-effect to release some capital funds which then could be applied more productively in the rest of the economy.

Obviously there are limits beyond which the reduction in capital and/or foreign exchange allocations to the modern industrial sector should not be carried. These limits are implied by our use of the terms *preferential* treatment, *low* interest rates and *overvalued* exchange rates in the preceding discussion. The signal as to when a reduction in allocations of capital funds to the industrial sector has been carried too far is when the expected marginal yield of capital in this sector is no longer higher than the alternative yield of that capital in other sectors. Likewise for foreign exchange : preferential access ceases to exist when the cost paid by a given sector for its foreign exchange is no longer lower than the true economic value which that foreign exchange has, at the margin, in other uses. We need not detain ourselves here, however, on the niceties of calculating precisely when this critical margin is reached, for in the countries to which the policy pattern decribed in section I applies, it is characteristically true that the degrees of preference given to the modern industrial sector both with respect to access to investible funds and with respect to the amounts of foreign exchange made available to it for capital goods imports have ben very large. The directions in which policies should move to correct these preferences are obvious, and they would have to move very substantially in these directions before giving rise to any plausible worries about their having moved too far.

(c) *Tax Exemptions for Particular Capital Investments*

It is nothing less than astounding how frequently the developing countries have resorted to the use of tax exemptions as a device for stimulating investment in particular

lines of activity, particularly so in the light of the chronic problems these same countries have in raising fiscal revenues that are adequate to meet their needs. The closest I can come to an explanation of this widespread tendency is the conjecture that the typical law maker has the feeling that the incomes generated from the investments thus stimulated are truly net additions to the nation's total income stream. If this were indeed the case, even the total exemption from tax of these new incomes would not entail a loss in government revenue, as compared with what it would be without the exemptions. However, this is rarely if ever the case. Normally, the capital invested in the exempted activities would otherwise have been invested elsewhere in the economy, where it would have generated income streams subject to tax; these revenues are simply lost when the capital in question is diverted to an exempted use.

Revenue considerations aside, however, there is a sound economic rationale which can justify tax exemption in certain cases. The basic principle involved is that where private market forces would themselves bring about a situation in which the social benefit from additional production would exceed the social opportunity cost of that production, a subsidy (or what amounts to the same thing, a reduction of the tax that would otherwise apply to the activity in question) is economically justified. Put in a technically somewhat more sophisticated way, when the sum total of incremental social benefits associated with all the changes in the levels of the various economic activities that are induced by a subsidy or tax reduction exceeds the sum total of incremental social costs associated with these same changes, then granting the subsidy or tax reduction is preferable on economic grounds to the status quo.

The case in which the above principle applies most directly and simply to the subject matter of the present paper is one in which the wages that have to be paid by enterprises in a given sector, activity, or region lie above the social opportunity cost of the labour employed. As an example, if the wage that had to be paid were Rs. 5 per day, while the social opportunity cost of the labour employed were Rs. 3 per day, a subsidy of Rs. 2 per man day would be required to make the cost perceived by the employing enterprises equal to the true social cost of the labour involved.

What is surprising in this connection is that so few schemes of tax exemption are related to the amount of labour employed,[2] even when the clear intent of the exemption legislation was to promote employment. The common and traditional approach is to make tax exempt, totally or partially, for a specified period or indefinitely, the corporate profits earned on the affected investments. Although such tax incentives do tend to increase employment in the activities in question, this comes as a side-effect rather than a direct effect of the incentive measure. The direct effect in this case is to increase the amount of capital employed, and it is strongest for the most capital intensive activities. For the same cost in terms of fiscal revenue foregone, a significantly greater employment effect could be obtained by gearing tax incentives directly to the employment of labour rather than to the use of capital, as was done in the Panamanian case. Some of the technical details associated with an employment-oriented tax incentive scheme have been dealt with in I.L.O., op. cit, pp 342—4.

[2] I know personally of only one a Panamanian Law of 1971 which reduces the corporation income tax paid on incomes generated in backward areas of the country by an amount equal to 10 per cent of the wages and salaries paid in those activities,

(d) *Artificially High Wages in the Modern Sector*

Like many other economic policies with dubious or even detrimental effects on economic efficiency and welfare, those leading to artificially high wages (including fringe benefits, social security taxes, and other employment-related labour costs) are motivated by the best of intentions. The aim almost invariably is to improve or protest the welfare of the workers, and there can be no doubt that this is the result for the workers who end up being employed in the affected activities (unless the laws are openly flouted, as is often the case with minimum-wage legislation). What is not so clear is whether labour as a whole gains as a consequence of the type of legislation in question. To answer this question we must inquire into its effects not only on labour in the affected sectors but also on the rest of the labour force.

This point has been well treated in standard economic analysis. In general it can be expected that an artificially high wage will reduce the amount of labour employed by the affected activities.[3] This in turn means that more people will be looking for work in the rest of the economy. The result is that wages will have to be lower there than they would otherwise be in order to absorb the extra labour, or else the degree of open unemployment will increase, or both. In each of these outcomes, labour in the rest of the economy is worse off than it would be without the artificial wage props affecting the modern sector—about this there can be no dispute.

We have, then, the phenomenon that workers in the 'protected' sector of the economy are clearly better off as a result of legislation and possibly other forces generating artificially-high wages there, while workers in the "unprotected" sector are clearly worse off. One question that naturally arises in this context is whether labour as a whole gains or loses as a consequence of the "protective" legislation. This question, too, has been examined in the economic literature, and the answer for an economy with given endowments of labour and capital is quite clear—the gain of labour in the protected sector more than offsets labour's loss in the unprotected sector when the substitutibility between labour and capital (as measured by the elasticity of substitution between these two factors) is lower in the former sector than in the latter. On the other hand, when the elasticity of substitution between labour and capital in the protected sector is higher than that in the unprotected sector, the losses sustained by workers in the latter sector exceed the gains by those in the former. Finally, when the elasticities of substitution between labour and capital are the same in both sectors, the gains to workers in the protected sector are exactly compensated by the losses to workers in the unprotected sector.[4]

Some readers may react to the above analysis by asking why one should not extend the "protection" of artificially high wages to all sectors of the economy. Plausible though it may seem at first glance, this policy would end up simply by creating additional open

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[3] There is a theoretical exception to this rule which applies when a single employing enterprise is so large as to itself be capable of significantly influencing the overall level of wages prevailing in its labour market area, but the practical importance of this case is extremely limited and would in no sense provide a justification for general wage legislation applicable to broad sectors of the economy.

[4] These results stem from a two-factor, two-sector model in which each of the two sectors is characterized by a production function that is homegeneous of the first degree, with given endowments of each of the factors available to the economy as a whole.

unemployment, for now all enterprises would be required to pay higher wages and all would seek means of economising on their use of labour.

Even when the protected sector does not cover the whole economy, and even when the labour market conditions in the unprotected sector (Particularly its wage flexibility) enable that sector to absorb all workers who are willing to work in it on the prevailing terms, the creation of a protected sector by means of artificial wage props can result in open unemployment of a rather special kind, which I would call quasi-voluntary. Where wages and other conditions in the projected sector are substantially superior to those applying in the unprotected sector, there are likely to be some people who are eager to obtain work in the former sector but unwilling to accept employment in the latter. They are involuntarily unemployed vis-a-vis the wages and conditions of unprotected sector. Yet by the standard procedures applied in the censuses and surveys which record unemployment, they would almost certainly be classified as unemployed[6] (This appears to be characteristic of the so-called "educated unemployed" in many countries. There seems to be little doubt that there are many employments in which most of these people could find work but in many cases—either because of the nature of the employment, the status associated with the job, or its amenities or location—they prefer to continue searching for preferred-sector jobs, usually white-collar jobs with high pay, status, and amenities, located in a major city, rather than accept what they regard as an inferior employment). It should be noted, too that the phenomenon of quasi-voluntary unemployment tends to be chronic as long as the conditions that give rise to it—wages and working conditions in the protected sector that are notably superior to those prevailing in the unprotected sector for workers of similar qualifications—continue to prevail. For under these circumstances there is always likely to be some group of applicants to whom working in the protected sector is attractive while working in the unprotected sector is not.

For the reasons stated above, it should be clear that a policy promoting artificially-high wages in a protected sector (usually, as previously indicated, the modern industrial Sector) of the economy is by no means an unmixed blessing. It distorts the allocation of resources in the economy, introduces an arbitrary differential between the rewards accruing to similarly-qualified workers depending on whether or not they are lucky enough to get protected-sector jobs, and tends to induce the appearance of what I have called quasi-voluntary unemployment. In addition, there is no presumption that the working classes as a whole are better off as a consequence of such a policy, though there is a virtual certainty that those who work in the unprotected sector will be worse off.

The issues surrounding policies that foster artificially-high wages in partictlar sectors are so fraught with political overtones, and the conditions in various countries are so different, that it would be presumptuous to propose a "solution" that pretended to be generally applicable without qualification. However, it appears safe to suggest that

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[6] These precedures usually ask people (a) whether they are employed and (b) if not, what efforts they have made in recent weeks to obtain employment. If no serious efforts have been made, the respondent is generally classified as being out of labour force, while if such efforts have been made he or she is classified both as being in the labour force and as unemployed. A respondent (whom I would classify as quasi-voluntarily unemployed) who is actively seeking work in the protected sector but not in the unprotected one would normally give a positive answer to question (b) and thus be classified in the sample or the census as an unemployed member of the labour force.

where, as in most places, a gap already exists between the wages and working conditions of the two sectors, pressures to enlarge this gap by granting even more preferences to the protected sector should probably be resisted, and where the gap is already large, a strategy should probably be sought which would lead to its (probably gradual) reduction over time.

(e) Summary and Comment

In a sense the key words in this section are *artificial, preferred, protected.* When the modern industrial sector has *preferred* access to credit and *artificially* low interest rates, efforts should be made to reduce or eliminate the preference, and to raise the rates they are required to pay for credit. When it has *preferred* access to foreign exchange for capital-equipment acquisitions, at an *artificially* low price, analogous conclusions follow. Tax incentives that give *preference* to investment in capital intensive activities should be avoided, or, if present already, reduced, and if such incentives are given at all they should preferably be tied or geared to the amount of labour absorbed by the affected enterprises. Similarly, policies which make labour costs in the industrial sector *artificially* high, creating a protected segment of the labour force at the expense of the rest of workers should be viewed with extreme caution, as they, like the policies listed earlier, reduce *artificially* the absorption of labour by the affected sector.

Readers of this section will perhaps have noted that the analysis is implicitly based on the notion that the enterprises in a sector will in fact respond in some significant way to changes in the relative costs to it of labour and capital, using more labour and less capital when their relative prices are not distorted in form of capital intensity than in the more common situation when such a distortion or bias exists. Whether or not such responsiveness exists is of course a question of fact. In principle, one can imagine a situation in which the nature of the technology is such that no serious alteration in factor proportions is feasible. Needless to say, I would not have devoted so much space to the preceding discussion if I did not believe that factor proportions were typically susceptible to ample variation in response to relative price changes. In the remainder of this section I shall briefly review the reasons for this belief.

Much has been made in the economic literature of the alleged inability of the developing countries to find "technologies" that are appropriate for their resource endowments. The existing technologies, it is said, were invented and developed in the more advanced countries and are designed with their conditions in mind. As a result they are much too capital-intensive to be suited to the conditions prevailing in the developing nations. This presumably leads to a situation in which essentially the same productive methods are used in the modern industrial sectors of poor countries as are employed in much richer nations, with correspondingly little labour-absorption taking place as these industrial sectors are developed.

There is an element of truth in the above position, but, in my view, it is a very small element. It is true that basic equipment used in industrial processes in the poorer countries tends either to be imported from abroad or if domestically produced to follow designs which are similar to those adopted by equipment manufacturers in the more advanced parts of the world. It is also true that, by and large, the design of a piece of equipment determines the amount and type of labour that is required to run it. It takes

one worker to run a given lathe or loom, for example, and this is true regardless of whether it is installed in a poor or rich country. However, the inference that the same capital intensity in all parts of the world, when similar machinery is used, is not warranted.

The evidence on this assertion is, I believe, decisive. We know that the levels of wage rates are far lower in the developing countries than in the developed. We also know that the rates of return generated by capital are comparable or if anything higher in the poor as compared to the rich countries. Consider, then, a hypothetical example of an industry which in, say, the United States follows a particular technology, and uses a combination of productive factors such that half of its value added accrues to labour and and the other half to capital (a quite typical rough relationship). Such, for example, would occur with 150,000 man-days of labour being used at a wage $ 20 per day, (for a total wage bill of $ 3 million per year), and with $ 20 million of capital being employed at a gross-of-tax yield of 15 per cent per annum (for a total gross-of-tax turn to capital of $ 3 million per year). Now assume that the identical processes are used in a similar enterprise in a poor country where the corresponding wage rate is only $ 2 per day, If the rate of return to capital were the same (15 per cent per year) the overall return to capital would again be $ 3 million, but the wages bill would only be $ 0.3 million per year. The share of capital in value added would be $\frac{10}{11}$, and that of labour only $\frac{1}{11}$. These are the kinds of grossly unequal shares of capital and labour in value added that would be implied by identical factor proportions in the two countries. Yet as we look at the actual shares of labour and capital in value added in the developing countries we rarely encounter such an extreme relationship. The inference is inescapable that much more labour must in fact be used in the industries in question that a strict replication of U. S. factor proportions would imply.

Where and how is this additional labour occupied? It certainly is not true that two or three secretaries sit at the same typewriter at the same time, or two or three operators work on a one-man loom or lathe simultaneously. In these particular operations it is probably true that the same factor proportions apply in the two countries being compared. But in many other operations: packing, loading, storage, shipping, materials handling, etc. etc., the less developed country typically uses much mere labour than the developed one. And when all the operations comprising an industry are taken together, the factor proportions of the poor country turn out to be vastly different from those of the rich one.

The above already implies a substantial responsiveness of the labour intensity of production to changes in the relative prices of factors, but it should be recalled in addition that there are usually at any one time a variety of processes or machine-types available to do particular tasks. Relative factor prices more favourable to labour-intensive production will in general induce the adoption, within this range of choice, of machine types that make greater relative use of labour. The function of the policies discussed in this section is to attempt to ensure that advantage is taken of whichever of these possibilities are economically viable in the economic setting of a given developing country at a given time.

III SOME ADDITIONAL FISCAL MEASURES FOR EMPLOYMENT PROMOTION

The preceding section presented suggested policy adjustments which would help to rectify the biases toward excessive capital intensity which tend already to be built into the policy structures of many developing countries. In the present section we shall discuss a number of additional measures that have been proposed toward this same end.

(a) *Changing the Rate of Growth of Output.*

I introduce this topic in the fullest awareness of a lesson that serious observers of the development process have increasingly come to recognise—there is no simple touchstone to economic growth, and in particular no key instrument of fiscal policy, or combination of such instruments, whose use will enable a nation to achieve a given growth target. Yet all too often the employment problem has been approached as if it were inevitably tied to the rate of economic growth—a linkage which in my opinion has tended to obscure the issue and to divert attention from more realistic ways of approaching and solving the problem at hand.

The characteristic output-linked approach to the employment problem can be summarised as follows. A target rate of growth of output per worker (say 3 per cent per annum) is established, in a circumstance where the natural increase of the labour force, is, say 2 per cent per annum. At the same time a specified rate of absorption of labour from the ranks of the unemployed, in the amount of, say, 1 per cent of the labour force per annum, is also established as a target. The remainder is a matter of arithmetic. If the employed labour force is to grow at 3 per cent per year (2 per cent from natural increase and 1 percent from unemployment absorption) and output per worker is to grow at 3 percent per year as well, then output *must* grow at 6 per cent per annum.

If only this were as easily done as said. Unfortunately, there are real economic barriers and constraints which must be overcome in order to increase the growth rate—scarcities of investible capital, of foreign exchange, of skilled labour of various kinds of professional, entrepreneurial and technical talents, etc. Moreover there are also cultural and institutional constraints, including many involving the traditional pattern and structure of government policies and processes themselves - that must be overcome in order to accelerate the economic growth rate. Surmounting these barriers is difficult, and entails both time and often substantial resource commitments. As a consequence, the future growth rate of an economy can be predicted only with a substantial margin of error, and in any case cannot be casually expected to reach the levels implied by ex-ante targets of labour force and productivity growth.

Obviously, efforts to expand the overall rate of economic growth are amply justified in their own right and should be vigorously pursued in any event. In short, such increases in employment as *can* be achieved via more rapid economic growth clearly *should* be, but it must also be recognised that this facile solution may not provide the total answer to the employment problem. The sheer size and obduracy of the task of stimulating the growth rate may and often will make it necessary to turn to other policies, more specifically oriented to the employment question, in order to attain an acceptable performance on that front. Some possible policies working in this direction have already been discussed, and we now turn to others.

(b) *Policies Directly Affecting the Composition of Output*

It was indicated earlier that it was not enough to shift the production of the economy toward the more labour-intensive sectors; to be effective such a shift should have to be accompanied by a corresponding shift in demand. Two types of fiscal-policy measures have from time to time been suggested as devices for accomplishing this end: policies designed to increase the demand for the products of labour-intensive sectors (1) through changing the relative prices of the products of those sectors as compared to those of more capital intensive industries, and (2) through changing the distribution of income towards those groups whose demand is more concentrated on labour-intensive products.

Neither of these sets of policies is likely to contribute substantially to the solution of the problem. They are by their nature blunt instruments in respect to their impact on employment; moreover, there are severe limits on the extent to which they can plausibly be exercised.

Consider the case of a policy designed to reorient demand between two broad sectors, both initially of equal size, and one twice as labour-intensive as the other. Clearly a shift from a 50 : 50 distribution of total demand between sectors to a 60 : 40 distribution must be regarded as massive, yet the impact of this enormous shift upon total demand for labour would be less than 7 per cent, as is illustrated in Table 1.

TABLE 1

Illustrative Effects of a Change in Sectoral Demand upon Employment[6]

	Before Shift	After Shift
Sector I		
Output	100	80
Employment	100	80
Sector II		
Output	100	120
Employment	200	240
Total		
Output	200	200
Employment	300	320

Now consider the kind of policy changes that would be necessary to bring about such a radical shift in demand. If the elasticity of substitution between the products of the two sectors were unity—a not implausible assumption where broad sectors are concerned—the relative prices of the products of the two sectors would have to change from

6. Total output is held constant because in this section we are discussing the sectoral redistribution of output, changes in the total amount having been treated under sub-heading III (a) above. Within each sector the ratio of employment to output is assumed to remain the same as before, since once again the motive of the example is to trace the consequences policies designed to induce sectoral demand shifts, and not of policies aimed at changing factor proportions within sectors. Finally, one must note that there are circumstances in which changes in demand for labour, either sectorally or globally, will work themselves out by changing real wages rather than actual employment. In a rigorous interpretation, then, the rows in Table 1 labelled "Employment" should be taken to stand for "Demand for Labour at Given Real Wages".

1 : 1 to 1.5 : 1 — a huge change in the light of the relatively modest employment-effect involved. To bring about such a shift in relative prices, truly massive measures of fiscal policy would be required. If the job were to be done by taxes on the product of sector I or by subsidies on the product of sector II, such taxes or subsidies would have to amount to some 20 per cent of the national income.

Alternatively, consider attempting to accomplish the shift in sectoral demand by way of a change in income distribution. Suppose that group A spends $\frac{2}{3}$ of its income on the products of sector I, and $\frac{1}{3}$ on those of sector II, while group B's expenditure on the products of the two sectors is divided in just the opposite way. Suppose also that the two groups initially share equally in the national income. Then in order, by income redistribution alone, to bring about a pattern of demand in which sector II accounts for 60 per cent and sector I for 40 per cent of national output, the distribution of income would have to be shifted so that group A got only 20 percent, while group B received 80 per cent of the national income—clearly an absurdly impossible task in any realistic political setting.

The simple exercises presented above demonstrate clearly that there are severe limits to the amount of increased employment that one can expect via redistribution of output between broad sectors of the economy : the policy instruments required, whether they operate through changing relative prices or through altering the distribution of income, would have to be wielded with a force far out of line with their expected impact on the amount of employment. Perhaps the most prudent conclusion to draw is that one could reasonably consider policies to change relative prices significantly or to alter substantially the distribution of income as parts of a general employment promotion programme if those policies were regarded as substantially justified in their own right, without regard to their prospective employment benefits. Otherwise it is virtually certain that different strategies can be found which, with less drastic policy moves, will more profoundly affect the employment situation.

Two such strategies can in a sense be directly inferred from the foregoing analysis. The first is that of stimulating the more intensive use of labour within given lines of activity, as distinct from trying to accomplish this and by shifting demand from sector to sector. This is essentially the aim of the set of policy adjustments discussed in Section II of this paper, which would attempt to rectifiy existing biases toward capital-intensity in the modern sector of the economy. Such a strategy would undoubtedly also induce some sectoral shift in demand, but it would increase the demand for labour not only through induced sectoral shifts, but also, and probably mainly, through increasing the labour intensity of production within each affected sector. Moreover, within each such sector, this type of strategy would induce changes in the relative prices of products, the labour-intensive ones becoming relatively cheaper. And there is a strong presumption that the elasticity of substitution among the final products involved would in this case be substantially higher than that which applies between broad sectors, thus producing a greater gain in employment for any given shift in relative prices between the products concerned.

(c) Policies Affecting the Structure of International Trade

Although there was a significant movement in a number of countries in the 1960-s in the direction of rationalising their policies affecting foreign trade, there are still many

whose current situation is characterised by a heavy emphasis on import substitue with comparatively little attention being paid to the promotion of exports. Import substitution policies, whether implemented through tariffs or quotas or licensing schemes, have often led to a situation in which the internal (e.g. rupee) value of a unit of an imported good or its domestically-produced counterpart was equal to two, three, or even more times the external (eg. dollar) value of the same good converted at the official exchange rate. In other words, for the particular products in question, domestic resources costs equal to two, three, and more times the official rate of exchange have as a consequence of the countries' foreign trade policies been incurred in order to save a dollar of foreign currency. At the same time, exporters either receive just the official exchange rate converting to local currency the foreign exchange that they earn, or, if through export incentive schemes they do manage to get a bit more, receive a premium of perhaps ten or twenty percent over the official rate.

The result is a situation in which much more is paid in terms of domestic resources, (measured in rupees) to enterprises for saving a dollar of foreign exchange via import substitution than is paid to them for generating a dollar of additional foreign exchange via export expansion. A number of countries (notably Brazil, Taiwan, and South Korea) have compiled astounding records of export performance as a result of policies which made serious efforts at redressing this imbalance in the incentive structures affecting import-substitution activities on the one hand and export activities on the other. But in many other countries progress in this direction has been meagre and export performance sluggish.

The rectification of the imbalance in incentives can take a number of different forms, including changes in import-licensing regulations, alterations of the tariff structure the granting of subsidies (or increasing existing ones) to exports, total or selective devaluation of the currency, etc. This is not the place to enter into a detailed analysis of these many options. Suffice it to point out that, in addition to easing the strains on a country's balance of payments, there is an overwhelming presumption that they will also have the effect of increasing the demand for labour. The relevant comparison here is not between the labour-intensity of possible additional export goods and that of an "average" activity of the economy; the comparison must rather be made with the additional import-substituting activities that would be required in the absence of export expansion. The new exports that would be stimulated by a well designed policy of trade liberalisation export promotion would surely be items in whose production the country concerned had a comparative advantage; the same cannot be said for the products that would enter on the import-substitution margin, given the extent to which that process has already been carried in most developing countries. It is clear that the comparative advantage of the developing countries must lie with labour-intensive as distinct from capital-intensive products, and one can accordingly anticipate that positive employment effects will take place as a consequence of the changing pattern of demand, between and within sectors, produced by international trade policies (trade liberalisation and export promotion) that are also beneficial in their own right.

(d) Policies Promoting the Migration of Labour

Labour markets in all countries are characterised by some degree of regional imbalance, in the sense that the wages paid for similar work exhibit significant variation

among areas. Some of these differentials are what are called "equalising" in the sense that they simply compensate for differences in living costs and/or in the amenities of life afforded by the different regions. Others, however, reflect a situation in which workers could truly improve their lot by moving from one area to another. In these cases there is a natural tendency for migration flows to be generated, which in turn conduces toward the reduction in the differentials of real wages across regions.

However, migratory flows are often sluggish, especially when channels of information are poor and when (for example in the absence of official programmes or of the informal security given by the presence of friends and family members at the destination) migrants face relatively severe problems and risks in adjusting to their new or prospective environment. In these circumstances there may well be scope for public programmes, both those aimed at improving the flow of labour-market information and those directly stimulating the movement of workers from depressed or backward areas to more prosperous and growing ones. Both these types of programmes have been successfully applied in Spain, where not only travel but also relocation subsidies (temporary living allowances at the point of destination) as well as help in obtaining new employment have long been given to migrants moving from the backward south-west region of the country to the relatively much more prosperous and dynamic north-east.

(e) Policies of Direct Public-Sector Employment of Labour

No solution to the employment problem would appear to be more direct and unequivocal than one in which the public sector directly adds to the demand for labour by creating new jobs. Yet even this solution is subject to important caveats. In the first place there is the fact that the public funds that are spent in direct-employment schemes are themselves a scarce resource. Unless the newly-employed labour generates enough additional social product to justify via production the use of public funds in this way, direct employment schemes take on the aspect of a total or partial dole. And while there are undoubtedly circumstances in which such a dole is a more socially-acceptable solution to the problem than doing nothing at all, it is certainly true that a high premium should be placed on employment schemes whose benefits, in terms of the value to society of the product that they generate (even if not in terms of their direct financial contribution to the public treasury) is adequate to compensate the public-sector outlay involved.

A second and related caveat is also warranted with respect to direct-employment programmes. This concerns mainly the question of how the government's added demand for labour is reflected on the one hand in increased total employment, and on the other in increased levels of market wages, including those of people who would in any event have been employed in the absence of the programme. The answer depends more than anything else on the aims that the programmes are expected to serve, and on the objective circumstances characterising the labour-markets of the areas where they are implemented. With regard to aims, the main issue is whether the purpose of the programme is increasing employment as such on the one hand or alleviating poverty (improving the distribution of income) on the other. With respect to objective circumstances, the issue turns largely on the elasticity of supply of the affected classes of labour in the labour-market area in question.

If the labour involved is highly elastic in supply, increased demand will be largely reflected in increased total employment while if the supply of the relevant classes of labour is relatively inelastic the effect of direct-employment programmes will be mainly to raise wage levels. This distinction points up the importance of the purposes of the programmes, for the aim of increasing employment can be frustrated by relatively inelastic labour supplies, while that of improving the distribution of income (especially with respect to those already employed) can at least in some senses be frustrated by highly elastic labour supplies.

One example of the importance of the interaction between programme aims and objective circumstances is provided by the medical programmes (Medicare and Medicaid) instituted by the United States government in the middle and late 1960-s These programmes led to a substantial increase in the demand for medical services, but given the inelasticity of supply, both of medical personnel (doctors, nurses, etc.) and of physical plant (mainly hospitals etc.) The end result has mainly been, at least to date, a sharp rise in medical coats without a marked increase in the total amount of medical services provided. In this case the objective, an increase in medical services, was frustrated by inelasticity of supply.

An opposite case would be a programme of direct employment whose aim was to improve the lot of agricultural labourers through bidding up to the market wage level. Here the appearance of additional workers, say through diverting them out of employment on family farms or by inducing the entry into the labour force of people who were close to the margin of indifference between being active members of the labour force or not, could make the achievement of a desired rise in the market wage level very costly in terms of the amount of public funds diverted to incremental direct employment that it would require.

Of course, the above discussion with respect to direct employment also applies to the other techniques, discussed previously, of increasing the demand for labour. Perhaps most of all it serves to illustrate the need for a clear understanding of the objective characteristics of the labour markets in which programmes for stimulating the demand for labour might be applied, and for a correspondingly clear definition of the goals that those programmes are expected to achieve.

IV SOME IMPRESSIONS CONCERNING THE EMPLOYMENT PROBLEM IN INDIA

I have had only a most limited opportunity to familiarise myself with the current state of the Indian economy with its development over the past decade. As a consequence I shall present here only a series of impressions garnered from a quick and inevitably partial survey of the literature and data to which I had access and from a limited number of conversations with fellow-economists both in the public service and in academic life.

(a) *Open Employment.*

Perhaps the most striking feature of the labour-market picture in India, at least to an external observer, is the low rate of open unemployment as it is conventionally measured and identified in the official statistics. The 1961 census showed unemployment of male workers to be only about 3 per cent of the labour force in urban India, and less

than one per cent in the rural sector. National Sample Survey data, as of approximately the same time, show the urban unemployment rate to be if anything lower than the Census data, but the NSS figures for the rural unemployment rate of males are higher than those of the Census, and of the same order of magnitude as the urban rates. For people in the prime working ages, measured unemployment rates are even lower, since the rates for those under 21 are usually between double and triple the overall average rate.

The trend of the unemployment rate over time, and especially in recent years, is to some extent a matter of conjecture, as unemployment was not measured in the 1971 Census, and since the NSS surveys of it stopped in 1966-67. But at least between 1960-62 (16th and 17th NSS Rounds) on the one hand and 1966-67 (21st Round) on the other, no deterioration of the employment situation appears to have taken place with unemployment rates going down from around 3 per cent in the earlier period to less than 2 percent in the later period for males in both urban and rural sectors.[7]

No direct evidence on the trend of unemployment is available since 1966-67 but indirect evidence from the Employment Exchange Register suggests that the situation might have worsened somewhat in the past five years, although the Register data is clouded by the facts of registration by people already employed, registration of many people at several different Exchanges, and the failure to register at all of some of the openly unemployed. Nonetheless, it appears fair to say that the rate of open unemployment is probably not significantly higher today than it was a decade ago.

This observation draws attention to the fact that over the course of a decade the Indian economy managed in some way to absorb into the employed status some 45 million additional workers–which is certainly a very substantial achievement ! Moreover, we know as yet far too little about how it was accomplished, although certain facts are clear ! (1) the modern industrial sector—the so-called organised sector—contributed relatively little to the absorption, adding only some 5.5 million workers between 1961 and 1971, and (2) the increased absorption came about in spite of a substantial increase in a number of "educated unemployed", with the number of such unemployed listed in the register increasing by more than one million (and percentage wise approximately trebling) over the decade.

Perhaps one clue to the explanation of the significant absorption of additional labour is that given in the World Bank's recent *Report* on India.

> " Low levels of open unemployment are not really very surprising. In a society as poor as India's, most people cannot afford to be unemploved—they have no savings nor social security nor relatives wealthy enough to support them—and in consequence they must find a source of income, albeit a meagre one. In rural areas, seasonal unemployment exists, but there is very little in peak seasons ".[8]

This at least helps to explain the motive on the supply side for labour to seek work in a very serious way; it does not, however, explain the mechanism by which it is actually absorbed. Here the evidence suggests that it is the normal processes of the labour

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7. There are more problems connected with the measurement of female as against male unemployment, due to the uncertainties of defining labour force participation for females. Nonetheless the general picture for females is similar to that for males; with the female unemployment rate falling from about 7—8 per cent to about 4 per cent between 1960—62 and 1966—67 in the rural sector and from 2—3 per cent to less than 2 per cent in corresponding periods for the urban sector.

8. International Bank for Reconstruction and Development *Economic Situation and Prospects of India* (May, 1972), Vol. I p. 45.

market that have worked, though perhaps sluggishly and imperfectly, to bring about the absorption in question. That market prices do work is evidenced by the seasonal movement of wages in agriculture, and by their relative movements over time among regions (particularly among those differently affected by the technical changes such as the recent "green revolution"). Also, the broad movements of real wages appear to have been of the nature required to absorb an increasing labour force in periods when technical change was relatively slow. Lubell and Sethuraman report that real wage rates in agriculture declined by some 16 percent between 1950-51 and 1964-65, but note that "in this sense, agriculture seems to have been the most labour-absorbing sector of the economy, as borne out by the steep declines in the capital-to-labour ratio (almost 40 per cent) and in the land-to-labour ratio (around 33 per cent) during the 15 year period "[9].

The sluggishness with which the labour market works is indicated by the evidence on the composition of the unemployed, over half of whom tend to be new entrants to the labour force (see IBRD op. cit., p. 44, note 3). This suggests that a substantial period of search is typically required before these new entrants find employment, a situation which appears to be even more acute for educated entrants to the working population.

In spite of imperfections and sluggishness of adjustment, however, it must be recognised that the labour market has over the last decade performed more adequately in absorbing increments to the labour force than most people would have predicted at its inception. It is, I believe, an important task of employment policy to ensure its continued performance of this task in the future, with, it is to be hoped, improvements in the flexibility and efficiency with which it does so.

(*b*) *Disguised Unemployment*

Apart from open unemployment we should recognise a variety of labour-market phenomena that have typically been referred to under the term "disguised unemployment". I have dealt with this question elsewhere,[10] so will not elaborate in detail here. The main point is that in most cases, and quite specifically in the Indian context, the phenomena commonly referred to as disguised unemployment could equally well (and probably better) be described as "employment in the low wage or unprotected sector", with no presumption that the marginal product of the labour involved is less than the wage rate it receives or the income that (if self-employed) it earns. On the rural front, there is evidence that landless labour—the most disadvantaged segment of the work force—has a marginal product which is closely approximated by its annual earnings[11]. On the urban front, the so-called underemployed also make a positive contribution to the national income, which is closely approximated by their earnings, regardless of whether they are occupied as household servants, low-wage workers in small manufacturing, commercial, or service establishments, or whether they are self-employed.

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9. Harold Lubell and S. V. Sethuraman, "Labour Force, Employment and Productivity Growth in India since 1950," paper prepared for a Conference on Manpower Problems in East and Southeast Asia, (Singapore, May 1971), mimeographed, p. 47. See also Tables 19 and 20.

10. See Arnold C. Harberger "On Measuring the Social Opportunity Cost of Labour" in International Labour Office, *Fiscal Measurers for Employment Promotion in Developing Countries* (Geneva I.L.O., 1972); esp. pp. 18—20 and pp. 4—7.

11. See Government of India, Cabinet Secretariat, *Wages Employment, Income and Indebtedness of Agricultural Labour Households in Rural Areas*, National Sample Survey No. 33 (Delhi, 1960) pp. 18, 23 and 61. See also Harberger, op. cit.

In much of the economic development literature, the disguisedly unemployed have been looked upon as a sort of almost-free resource—a group of workers from which the economy could draw at virtually no cost in terms of product or welfare foregone. This leads to treating them analogously to the openly-unemployed—an analogy which I find to be strained in concept and misleading in practice, as far as its policy implications are concerned. On the other hand, treating the disguisedly unemployed in the same fashion as the rest of those who are employed at tasks yielding low earnings more accurately reflects their contribution to the economic process and conduces toward a more informed diagnosis of the employment problem [12].

(c) A Problem of Unemployment or a Problem of Poverty?

It was argued under sub-head (a) above that open unemployment was not severe in India, and that substantial labour-force increases had been absorbed without significant increase in the rate of unemployment. Under sub-head (b) it was argued that the designation of "underemployment," at least as a widespread phenomenon, was probably a misnomer, and that the great bulk of the people often denominated as being under-employed could and should more appropriately be classified as "low-wage employed" persons. It might seem natural to leap from these assertions to the conclusion that no problem exists, but this is far from my intention. My purpose is rather to focus attention on the problem of poverty, which is both much more serious and much more widespread than that of unemployment as such. It can be true both that the rate of open unemployment is low, and that the people usually classified as under-employed are not in any relevant sense a "free resource" in the economy, and yet a severe problem of poverty can exist, as it surely does in India.

The issue as to whether the basic problem is one of unemployment or of poverty is, I believe an important one, especially where the setting of social priorities and the making of public policy is concerned. For one example, a focus on unemployment would tend to lead to policies that were relatively more neutral as among regions than those arising out of a focus on poverty, which would necessarily be concentrated more heavily on the backward areas of the country.

For a second example, the poorest groups in the economy tend to be those who are most disadvantaged, even with respect to rudimentary primary education; a povery

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12. To be sure, there are groups in the labour force whose economic contributions fall short of their earnings. In the private sector, activities with both free entry on the one hand and fixed prices of output on the other tend to attract resources up to the point where the *average* (rather than the marginal) returns per resources unit are equalized with the opportunity cost of the resources in question. And when, as is normally to be expected, average returns to an activity are a declining function of its scale, this means that earnings per unit of a given resource will exceed its marginal product. In the public sector, particularly in administrative agencies as distinct from enterprises producing marketable products, the linkage between a worker's contribution and his earnings is simply blurred, leading to the possibility that in some cases the former will fall below the latter. But neither of these cases can be considered to be the general rule—in the private sector, fixity of output price rarely is found in combination with free entry of productive factors, and in the public sector it is to be presumed that the fraction of total employment that could be characterised as "redundant" is also small. Moreover, considering the uses to which the concept of disguised unemployment is usually put in economic-development analysis, it is folly to think that more than a small fraction of the new jobs created by an increase in labour demand will be filled by people drawn (directly or indirectly) from either the "free-price, free-entry" segment of the private sector or out of "redundant" jobs within the public sector. Thus the notion of a pool of underemployed labour (in the sense of its having marginal productivity significantly below its earnings), which can be readily drawn upon to meet newly-generated demands in the rest of the economy, appears to be quite wide of the mark.

approach would attempt to rectify this disadvantage, even though the incidence of unemployment among illiterates has consistently been below the average incidence for the labour force as a whole*. For a third example, the migration of labour from poorer to richer regions is likely at least temporarily to increase the unemployment rate in the area of destination. Looked at from an unemployment focus, such movement could be given totally negative marks, while looked at from a poverty perspective it would likely be recognized as a fundamental corrective measure for which some period of transitional unemployment in the destination region (until relative wages adjusted so as to absorb the added labour) was probably a price worth paying.

In short, a poverty perspective concentrates attention on poor regions versus rich, on disadvantaged groups versus the rest of society, on poor people generally, while an unemployment emphasis blurs this focus to some extent. Many of the policy indications stemming from the two diagnoses of the problem are similar in terms of their general thrust, but they diverge in important ways as well, and where they do it is likely that those stemming from a poverty focus will more accurately reflect the true conditions and needs of the economy**.

V POSSIBLE POLICY DIRECTIONS FOR INDIA

In this section I attempt to treat some of the policy issues that have been suggested in previous parts of this paper, with particular reference to the Indian economy, though not without once again adverting the reader to the fact that the picture that I have managed to assemble of the current Indian economic scene is, as it were, painted in broad brush strokes on the basis of information of a quite general nature (and therefore undoubtedly incomplete, especially with regard to details).

(a) Relative Factor Prices in the Modern Sector

The policy pattern described in the last half of Section 1 as typical among the developing countries appears to fit the Indian case without significant modification. Preferences for the modern sector, with respect to access both to capital funds and to imported capital equipment have not only existed but have been quite strong, and this applies both to quantitative preferences (licenses, approvals, etc.) and to price preferences (low interest rates, low duties on capital goods). Tax incentives in the form of development rebates and the rapid depreciation of favoured investments for tax purposes, have as in most countries been tied to the amount of capital employed (development rebates are a fixed percent of investment outlays, and accelerated depreciation allowances are ipso facto proportional to the capital sums being written down). At the same time, legislation regarding minimum wages and other conditions of work, and the government protects the position of the labour force of the organized sector as distinct from most of the remainder

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* See Planning Commission, Govt. of India, Report of the Committee of Exports on Unemployment Estimates (Dantwala Report) 1970, Tables 29 and 30, pp. 106—107.

** There are many indications of an increased awareness in India, both inside and outside of government of the need to approach the poverty problem as an issue in its own right. See especially V. M. Dandekar and Nilakantha Rath, *Poverty in India* (Bombay, 1971) and Government of India, Planning Commission, *Towards Self Reliance : Approach to the Fifth Five Year Plan (New Delhi; June 1972)*. A similar awareness may also have motivated the Dantwala Committee's perspicacious treatment of the problems measuring unemployment: " In a complex economy, the character of the labour force, employment and unemployment is too hetero-geneous to justify aggregation into single-dimensional magnitudes." (Dantwala Report p 31, also *passim.*)

of the economy. Finally, the linkage observed in many economies connecting import licenses for raw materials, etc. to installed capacity appears to describe the Indian situation as accurately as it does those of a number of other countries.

The indicated directions for policy adjustment suggested in Section II accordingly seem to be appropriate in the Indian case. Athough brusque reversals of existing policies could be disruptive of economic activity and of employment, because of the heavy requirements of adjustment that they would impose on the economy, a gradual shift of the emphasis of policies affecting the costs and availability of credit and foreign exchange, and of those affecting labour costs would minimise such difficulties and would accordingly appear to be appropriate. The main direction of change here should be toward costs and availabilities of capital funds and of foreign exchange for the modern sector that more adequately reflect the scarcity value of these resources in the Indian economy. With respect to legislation and regulations governing labour costs, policy makers should probably resist pressures to enhance the already substantial gaps between the wages and conditions enjoyed by workers in the organised sector and those applying to the rest of the labour force. The focus on poverty emphasized in Section IV (c) suggests instead that priorities should be given to policies which would improve the lot of the poorer and as yet neglected strata of the labour force.

(b) Policies Affecting the Composition of Output

In Section III (b) it was suggested that one could hope to accomplish very little by way of increasing the demand for labour through policies designed to affect the composition of output as among broad sectors, regardless of whether the policy instruments employed worked through changing the relative prices of the products of the different sectors or through changing the distribution of income. The judgment was there reached that such policies should be pursued when justified in their own right, but that their influence on the demand for labour was not likely to be sufficiently strong to warrant its being the prime reason for their adoption. It was also stated that the rationalisation of the structure of relative factor prices would itself tend to stimulate the greater use of labour through its influences (1) on the choice of technique within given activities, (2) on the composition of demand for the products of the different activities that comprise each sector, and (3) though also in a limited way, on the structure of demand among broad sectors. It was concluded that the rationalisation of the factor-price structure was, other things equal, to be preferred to product-demand-oriented policies as an instrument for augmenting the demand for labour. There would appear to be no reason why this judgment would not apply in the Indian case as well as in those of other developing countries. This leads to the judgment that policies attempting to influence the demand for labour indirectly though product demand should probably be avoided.

In what might appear to be a deviation from the above judgment Section III (c) suggested that the demand for labour would almost certainly be augmented by a rationalistion of the policies pursued by most developing countries in the foreign trade area, and in particular by the reduction or elimination of the bias against exports that tends to be built into such policies. The contradiction is more apparent rather than real, however, for the emphasis in section III (c) was on the complementarity existing between foreign trade rationalisation on the one hand and increasing the demand for labour on the other. There can be little doubt that this is true in the case of India, hence there is every reason for considering the rationalisation of trade policy as a matter of high priority in its own right, and one which in addition will contribute to the improvement of the employment picture.

(c) Policies to Promote Migration

In considering policies that would promote or facilitate internal migration, India faces larger problems than most other countries. On the one hand there is the question of sheer numbers, the vast size of the out migration that would be required to have a significant impact on levels of living in the poorest regions of the country, and the heavy burden of absorption that this would place on the receiving areas. On the other hand, India's regional diversities with regard to language, culture, customs, etc. only add to the problems as seen both by the migrants and by the populace of their destination areas. To many, the problem of handling the migration flows that come about naturally undoubtedly seems serious enough already, without compounding it by special migration-promoting efforts. Yet regional inequalties are so great in India, and the natural resource endorsements of the backward regions so meagre, that it is hard to imagine any significant movement toward greater regional equality in the absence of special policy efforts favouring migration.

Needless to say, the movement of capital must also be a key element in any viable strategy for coping with the poverty issue. Indeed, it alone may be sufficient to raise levels of living in some presently-backward areas to the point where they cease to arouse special concern. But it is most unlikely that this will be true for the bulk of India's backward areas. In most of them, as in the case of the South of Italy, the Northeast of Brazil, and the Maritime provinces of Canada (plus also the historical experience of the Southeast United States) outmigration of major proportions is undoubtedly a necessary component of a successful attack on regional poverty. The choices facing policy-makers here are admittedly difficult ones, but once the poverty problem is recognised, as it was argued in Section IV to be the major and fundamental challenge, there would appear to be no escape from the necessity of such choices. Policies promoting and facilitating migration are obviously only part of the answer to the poverty issue, but they are an important part. In the end, solving the problem of regional poverty entails shifting the demands for and suppiles of labour among the different regions, and migration polices are the key element on the supply side.

(d) Direct Public-Sector Employment

The impressionistic view of the Indian labour market structure that was presented in Section IV has strong implications regarding the role of direct public-sector employment. In the first place, the focus on poverty urged in Section IV (c) points toward programmes of direct employment affecting the lower strata of the labour force, and aimed at raising the levels of their wages throughout each relevant labour market area. The purpose should not be the creation of additional protected enclaves of workers being paid greater-than-market wages, but rather the use of direct demand to bid up the overall level of market wages for the least skilled, thus improving the lot of the great mass of the disadvantaged in the area in question. In the second place, it is clear that direct-employment schemes oriented toward the poverty problem should in principle be biased toward the poorer regions, and toward the poorer areas within each region. The even-handed spreading of the extra demand across all districts, regardless of their wealth, such as is entailed in the recently-instituted crash programme for rural employment, is likely seriously to dilute the degree of amelioration of poverty than can be accomplished with a given allocation of funds.[13] In the third place, the relative inelasticity of labour supply

[13] The Ceiling of Rs. 100 per month on the wages paid to the labour hired under the Crash Programme may tend to make it inoperative in some very prosperous districts where the market wage is already higher, but this is the only sense in which the Programme incorporates any bias toward poor areas.

within labour market areas, for which the low rates of measured open unemployment and the substantial differentials in wages among regions can be taken as evidence, augurs well for the potential success of direct-employment programmes. (If labour supply were highly elastic, as some writers have assumed, the impact of the programmes on wages, and possibly also on serious poverty as such [14] would be small).

If my analysis is correct, the mounting of direct-employment programmes thus has considerable potential as part of the attack on poverty. However, some qualifications are in order. First, the easiest projects in which to engage in such a programme are probably in the field of public works. Here there are likely to be a limited number of viable projects (i e. projects where social benefits are adequate to justify their costs) in any given area. This means that, unless other sources of labour demand are found over time, the programme would either gradually wither away (as the viable projects ran out) or would take on the aspect of a quasi-dole (if the labour used in the direct-employment programme came to be applied to projects with costs substantially in excess of benefits). To accommodate this problem, more permanent solutions must be sought, which either give rise to continuing production (as distinct from once-and-for-all operations like public works) or bring about a reduction in labour supply (presumably through regional outmigration). Policies to accomplish these aims have already been treated above. The time-factor operating against major and continuing reliance on public works programmes for the long run simply underlines the need for a coordinated and multifaceted attack on the poverty problem, rather than any single-pronged effort.

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The special meeting of the Seminar on Tuesday, the 25th July in the Seminar room of the Institute under the chairmanship of Mr. R. Venkataraman, ex-Minister of Industries, Tamil Nadu and Member, Union Planning Commission, heard a presentation of the main ideas in the above paper by Dr. Harberger, Professor of Economics, University of Chicago. In the discussion that followed, there was reference to the studies under way in the IADP and IAAP areas of the State showing that the new agricultural technology is employment creating and that many forms of under-employment are a result of full employment for a short duration during the sowing and harvest season only. The problem for the State and the Country is how employment can be generated on a massive scale and to meet the seasonal nature of agricultural employment and the large scale unemployment among landless labourers in the off season. The data on employment, and unemployment is defective and on under-employment almost non-existent but the existence of massive unemployment is a fact. Of the 6,000,000 new labour force entrants per annum, less than 2.000,000 are absorbed in the organised sector, leaving 4 million unemployed or under-employed in the primary sector. Further the 2 to 3 percent unemployment of the population gives for a sub-continent, like India with a huge population, a figure of unemployment which is 14-20 times that for a country like the United States with an unemployment of 6 per cent of its work force. If unemployment is defined not only in relation to the desire to the work, but also to a given level of wages, then such a

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[14] In technical terms, so long as we are specking of a movement along a labour-supply schedule, the newly-employed would tend to be people who were out of the labour force under the terms and conditions of work that prevailed before the programme, and only willing to enter it as a consequence of the improvement in those terms and conditions as a result of the programme. These are likely to be members of less-poor families, who were able to "afford" not to work in the pre-programme situation, rather than the most serious victims of poverty for whom such a choice would not exist.

classical definition would push our unemployment figures to very much higher levels. For us in India there is no difference between poverty and unemployment, the two are coterminous.

It is true that the rates of unemployment decline with decline in literacy. Open nnemployment among manual labourers is small. Also free and full schooling reduces the number of those seeking work in the labour market. In this connection it was pointed out that the figure of 250 days of work for agricultural labour was true only of the cash crops and IADP areas. In the dry farming areas which cover 60 percent of farm families in this State and 80 per cent for the Country as a whole the normal number of days of work was 80-90. Hence the employment problem and the consequent poverty problem relates to the dry farming areas to which the employment generating new technology should be applied.

The problem of educated unemployment is alarming. The distribution of the educated unemployed between professions and the excess supply of skilled persons over the demand for their services are some of the worrying features. The theoretical answer is for the supply/demand forces to operate and for wages and salaries to drop to a point where there will be no educated unemployment. On this some felt that such a development is alredy taking place without any visible effect on the numbers of educated unemployed which has now passed the 2 million mark. Today P.U.Cs. are accepting the post of peons, B.As. and M.As. are accepting the posts of clerk-typists, bus conductors etc, The problem is the sluggishness of the economy which even with this free play of supply and demands forces, cannot absorb the educated unemployed. Other members felt that there needs to be a complete change in the attitudes of employers and graduates. There is also need for public opinion to support this change. Employers must stop asking for University diplomas and examine the real worth of each candidate. Graduates must be prepared to work hard, work with their hands and go anywhere where there is an employment opportunity.

In the area of self employment, there is a great chance to meet our massive employment problem. Here we are not doing well. Self employment is the growing area of employment in developed countries. The historical trend has been for industrial employment to replace agricultural employment, and for service employment in turn to replace industrial employment. In India the service sector is 14.6 percent of the work force according to the 1961 census. This is an area—with self employment in banks, trades, agro-service centres, commerce etc,—which should be developed rapidly. This neglected sector in this State can absorb large numbers as is shown in Punjab and Haryana through small artisans, workshops, repair shops etc.

Finally a point was made that our planned economy has gradually become a restrictive economy. The tradition of self denial is today in conflict with the want for the good things of life. This trend against normal goods and services, which are classed and condemned as luxuries is another restrictive element. There is less and less free play of supply and demand, lessening free competition and increasing restrictions in the productive apparatus of the economy, through the application procedures for licensing and the MRPT Act. The result is that persons who are competent and can produce more are held back and those who cannot are given all encouragement. This limits our employment generation and potential.

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